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HOW MANUFACTURING CO-OPS MARKET GRADE A MILK

By Donald R. Davidson

FCS Circular 26

Farmer Cooperative Service • U.S. DEPARTMENT OF AGRICULTURE

THE Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, merchandising, product quality, costs, efficiency, financing, and membership.

The Service publishes the results of such studies, confers and advises with officials of farmer cooperatives, and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

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U.S. Department of Agriculture

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This study was conducted under authority of the Agricultural Marketing Act of 1946 (RMA Title II).

HIGHLIGHTS

THIS study covers data collected in a survey of fluid milk marketing of 124 dairy manufacturing cooperatives located in Minnesota, Wisconsin, and Iowa, and includes detailed analyses of three selected concerns. This study should help cooperative and other dairy firms decide whether it is wise to handle Grade A milk. Any decisions by these firms on Grade A marketing call for careful self-analysis, particularly on estimates of operating costs that may be incurred in such marketing.

Handling Grade A fluid milk has become increasingly important to dairy manufacturing cooperatives. Originally set up to manufacture ungraded milk, these cooperatives and similar concerns must decide today whether it is economically feasible to gear themselves to the trend toward Grade A milk production and marketing.

Types of Cooperatives

Farmer Cooperative Service in 1957 surveyed two principal types of cooperatives—manufacturing concerns already marketing Grade A fluid milk and manufacturing concerns with non-Grade A fluid marketing operations.

Of 124 cooperatives responding, 81 were marketing Grade A milk. During the peak years of adding Grade A operations—1951 to the time of the survey—about half of the reporting cooperatives began

marketing Grade A fluid milk. Two-thirds diversified primarily because they believed a trend was developing toward Grade A milk production. Other reasons involved higher returns for patrons' milk, growing customer demand, and procurement competition.

As for the 43 manufacturing associations marketing only non-Grade A fluid milk, about half were seriously considering converting their fluid milk operations to meet Grade A standards. Of these, almost 60 percent definitely planned to make necessary changes in receiving and handling facilities, thus opening the way for producer-members to convert to production of Grade A milk.

In comparing the Grade A firms with the non-Grade A firms, we found that fluid milk marketing remained much more of a sideline for the non-Grade A firms. At the time of the survey, non-Grade A firms manufactured about 90 percent of all milk qualified for drinking.

Extent of Diversification

As to degree and type of diversification of Grade A handling firms, the number selling Grade A milk in bulk about equaled the number bottling Grade A milk. Since the start of Grade A operations, these firms had increased the number of functions they performed. Although only 5 percent started selling Grade A milk by combining all 3 opera-

tions—bulk milk, bulk cream, and bottled milk products—that proportion had more than doubled by the time of the survey. Of all Grade A milk reaching fluid outlets, 82 percent was sold as bulk milk and cream. Bottled milk and cream sales made up the remaining 18 percent.

By diversifying to include Grade A handling, cooperatives were able to (1) supply raw whole milk to fluid milk distributors in Federal order markets, (2) supply bulk cream to distant markets, and (3) bottle milk, chiefly for local consumption. Also, some cooperatives were able to produce certain higher quality manufactured products when substantial proportions of “surplus” Grade A milk were included.

Cooperatives X, Y, and Z

Covering the period of 1955 through 1958, case studies of three cooperatives, selected from those participating in the general survey, brought to light individual problems and differences. While it would not be sound to generalize broadly from these case studies, we may summarize as follows:

1. Participation in market-wide pools of certain Federal milk orders was the major marketing method used by many manufacturing co-ops in developing their Grade A milk program.

2. Despite increasing supplies of Grade A milk over the last 4 to 5 years in many Midwestern fluid markets, the price differential between Grade A and manufacturing grade milk did not decline; in some instances it even increased. Mainly by paying larger indirect or supplemental payments to producers of Grade A milk, two of the three

cooperatives studied in detail increased the price differential between Grade A milk and manufacturing grade milk between 1955 and 1958.

3. Additional plant costs in installing facilities for receiving Grade A bulk tank milk were insignificant for concerns already equipped for receiving Grade A can milk.

4. Manufacturing cooperatives able to expand their operations to Grade A milk handling by installing only bulk receiving facilities realized much greater savings than those concerns having to install Grade A milk can-receiving equipment and then to convert to bulk.

Alternatives

A milk manufacturing cooperative usually has several alternatives about marketing Grade A fluid milk: (1) To not handle it, (2) to receive Grade A milk and establish its own bottling operation, (3) to sell bulk milk and/or cream to fluid distributors, or (4) to combine operations described in 2 and 3.

Many small cooperatives, deciding that adding a Grade A operation is necessary to compete in the market, may seriously want to consider integration or merger in all their aspects. Some large associations may find it desirable to add several Grade A functions at the start.

This circular shows how many milk manufacturing cooperatives market Grade A fluid milk successfully. However, it points out that a cooperative should undertake Grade A operations only after a careful market study and estimates of added operating costs that may be incurred indicate a high probability of success.

How Manufacturing Co-ops Market Grade A Milk

By

Donald R. Davidson

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MILK manufacturing cooperatives and other concerns in many parts of the midwest are adding facilities for handling Grade A milk.¹ Reasons for diversifying into fluid operations include: Pressure from dairy farmers, local market demand, competition from other firms, and a growing belief in a trend toward a single standard of milk.

To obtain information on these developments in the trend toward Grade A, Farmer Cooperative Service in 1957 surveyed 124 dairy manufacturing cooperatives in Minnesota, Wisconsin, and Iowa that marketed fluid milk. A preliminary report on this survey was published in 1959.²

FCS then selected three cooperatives from this group for more de-

tailed analyses of their operations for the period of 1955 through 1958. This circular combines the information from the preliminary report with the information obtained through these case studies.

It explains why dairy manufacturing cooperatives diversify into fluid operations and provides information on cost of conversion. It helps answer the question: Should a manufacturing cooperative expand its operations to include handling Grade A milk?

This circular points up some of the major advantages and disadvantages of diversification of manufacturing cooperatives by adding fluid milk operations. It considers some of the problems involved in "retooling" a plant for handling both types of milk. Detailed facts on costs of adding Grade A equipment, the range of seasonal and monthly deliveries, records of utilization, and like data came from the three associations examined in the form of case studies. Analysis of cost factors did not include study of additional operating costs incurred by expanding into Grade A fluid marketing operations.

¹ As used in this survey, Grade A milk means milk inspected either by local or State health departments, under requirements of a health regulation with minimum standards approximating those of the U.S. Public Health Service's RECOMMENDED MILK ORDINANCE AND CODE, 1953 edition.

² Davidson, D. R. GRADE A MILK MARKETING BY MANUFACTURING CO-OPS—FINDINGS IN MINNESOTA, WISCONSIN, AND IOWA. General Report 56. Farmer Cooperative Service, U.S. Dept. of Agr., May 1959.

In addition, this circular analyzes cooperatives that received Grade A milk in combination with non-Grade A milk or farm separated cream or both. Also discussed, though in less detail, are the experiences of those concerns receiving non-Grade A milk only or those receiving both non-Grade A milk and farm-separated cream but having fluid milk outlets. Nearly four out of five dairy cooperatives that operated in the north central region in 1956 were located in the tri-State region studied.

The results of this study have made it clear that an association should not try to expand without guidelines. Diversification into handling Grade A milk requires substantial increases in equipment investments. Milk manufacturing concerns would not consider expanding into marketing Grade A milk unless they anticipated the advantages would eventually offset these additional costs. Such costs must be taken into account, because Grade A producers must receive

adequate compensation for their expense of producing better quality milk.

Demand from local markets has been one of the factors motivating many manufacturing cooperatives to market Grade A fluid milk. Another incentive, but to a lesser degree, has been the seasonal and emergency needs of out-of-State milk markets having inadequate local supplies. Before an association installs the necessary equipment, it needs to know what year-round markets—local and regional—exist and how it can expect to dispose most profitably of the Grade A milk. Farmers also need to know about market conditions before they make the change to Grade A. Beyond knowing local and area markets, one of the best ways to judge whether diversification can be profitable is to learn what other associations have done and are doing.

Readers interested in the detailed methodology and procedure for conducting this study will find it outlined in the preliminary report on this study already mentioned.

Graded and Ungraded Milk Marketing

IN the past, manufacturing associations branching out to market ungraded fluid milk³ have had wider market opportunities than the firms that have remained strictly in the dairy manufacturing field. Today, however, consumer demand for table milk has changed, making it more and more difficult

to market ungraded fluid milk for drinking purposes. Each year the number of cooperatives selling ungraded milk in the fluid market declines.

Growing Importance

High quality is essential in our modern and keenly competitive food markets, where dairy products must compete with substitutable foods for the consumer dollar. Consumers are becoming more interested in the conditions under which their manufactured dairy products are pro-

³ Ungraded fluid milk and manufacturing grade milk are used interchangeably in this circular and mean milk not required to meet sanitary standards above those for manufacturing purposes. Except in markets without an inspection code, this milk is not eligible for fluid marketing.

duced. Likewise, a number of dairy farmers feel that the future holds greater promise for Grade A milk producers than for producers of ungraded milk. They think increased returns will more than offset the cost of converting to Grade A.

As a result of such consumer and producer sentiment favoring Grade A milk, associations face strong demands to provide facilities and markets for Grade A handling. Some of these associations see a growing trend toward a single standard for milk, whether it be manufactured or packaged for fluid use. Many firms are already marketing fluid Grade A milk in addition to manufacturing ungraded milk. Others, however, are still attempting to market fluid non-Grade A in addition to manufacturing it.

The 124 reporting cooperatives in this study represented 16,780 farmer-members shipping milk qualified for fluid use. Of the reporting associations, 81 marketed Grade A milk and furnished information on 12,635 patrons shipping Grade A milk, while the 43 cooperatives selling only ungraded fluid milk

furnished information on 4,145 patrons.

In 1956, dairy manufacturing cooperatives marketing Grade A milk in the area surveyed received 44 percent of their total butterfat in Grade A milk, 49 percent in manufacturing grade milk, and only 6 percent in farm-separated cream.

For those who consider entering the Grade A field and for those already in the field who want to evaluate their operations, a comparison of the experiences of other concerns and trends in the same general area may be the most helpful guidepost.

Entry into Grade A

One of the basic questions asked by managements of milk manufacturing cooperatives or other firms about adding facilities for handling Grade A milk is this: Should we enter the Grade A market now?

In order to find out if entry will be economically feasible under conditions common in the industry, FCS sent out a mail questionnaire. This sought to determine the situation with respect to new entries of cooperatives and plans of non-



Dairy manufacturing cooperatives in the Midwest have been expanding operations into the marketing of Grade A fluid milk. The co-op shown above has developed its Grade A program primarily by shipping milk in bulk form into a Federal order market-wide pool.

Grade A cooperatives for diversifying into the Grade A fluid milk field.

The survey showed that during the 6-year period of 1951-56 dairy manufacturing cooperatives rapidly diversified into Grade A fluid milk handling. The data assembled did not show the actual growth of Grade A handling in the dairy industry from year to year, since no information was available on the number of concerns that may have stopped Grade A operations during this period. However, the data indicated how recently firms then operating began Grade A fluid marketing.

Of 77 cooperatives reporting, 3 out of 5 started handling Grade A fluid milk after January 1, 1951. The most important years were 1952, 1953, 1955, and 1956 when 36—or about 50 percent—added Grade A fluid operations.

Data for 1957 were incomplete, since the questionnaire reached co-operatives early in the year.

In Wisconsin, Grade A marketing developed at an earlier date than in Minnesota or Iowa. Only one-fourth of the cooperatives reporting from Minnesota and Iowa were marketing Grade A fluid milk before 1951, as compared with more than half of Wisconsin's associations.

It is not enough to know when cooperatives diversified. Because once we know why dairy manufacturing concerns have entered Grade A milk marketing, we may have a vital key to improve efficiency in handling this milk.

What, then, were the basic causes of the uptrend in Grade A diversification? Of the 79 dairy manufacturing cooperatives answering this question in the tri-State area, two-thirds diversified to Grade A milk because they believed such a trend was developing (table 1).

Taking a positive, long-term approach, many concerns added Grade A operations because they

Table 1.—Reasons cooperatives added Grade A fluid milk operation

| Item | Minne- sota | Wis- consin | Iowa | 3-State total |
|-------------------------------------------------------------------------------|-------------------------------|----------------|------|------------------|
| Number of cooperatives reporting----- | 36 | 29 | 14 | 79 |
| Reasons ¹ : | <i>Number of cooperatives</i> | | | |
| Belief in a trend toward Grade A milk production. | 27 | 21 | 5 | 53 |
| To meet local customers' demands for bottled milk. | 27 | 7 | 9 | 43 |
| To obtain higher sales price for producer-patrons' Grade A milk. | 16 | 22 | 5 | 43 |
| To prevent loss of producer-patrons wanting to convert to Grade A production. | 12 | 19 | 3 | 34 |
| To meet competition from another dairy firm buying Grade A milk in the area. | 12 | 15 | 1 | 28 |
| To supply seasonal and emergency needs. | 6 | 9 | 2 | 17 |
| To supply regular year-round market-- | 1 | 2 | 1 | 4 |

¹ Number of reasons exceeds number of cooperatives because most cooperatives gave more than 1 reason.



More and more Midwestern dairy herds are producing milk that meets Grade A standards. Two-thirds of the dairy manufacturing cooperatives surveyed throughout Minnesota, Wisconsin, and Iowa reported this growing trend toward production of Grade A milk.

thought it would eventually be more profitable for their farmer-members. They also sought to meet growing local customer demands for Grade A bottled milk and to supply markets for bulk milk. The data showed that other associations diversified either to prevent their farmer-members from shifting to firms already handling Grade A milk or to compete with other firms buying milk in their area.

Considering, by States, motives for diversifying, a third of the cooperatives in Iowa listed a growing trend toward Grade A milk compared with nearly three-fourths of the cooperatives in both Minnesota and Wisconsin. Three-fourths of the cooperatives in Wisconsin, two-fifths in Minnesota, and only a third in Iowa diversified to bring increased returns to members. Local customer demand figured most prominently in Minnesota's and Iowa's Grade A milk marketing.

Conversely, Wisconsin had the largest percentage diversifying to meet generally expanding markets for Grade A bulk⁴ milk. Table 1 gives further details on reasons for diversifying.

Non-Grade A Marketing

What about manufacturing cooperatives now in the ungraded fluid milk field? Will they continue marketing ungraded fluid milk only? Or, do they plan to enter the Grade A fluid market? Answers to these questions should indicate whether the trend is toward Grade A.

About half the reporting cooperatives handling only ungraded milk were seriously considering converting to a Grade A inspection basis within 5 years. Of these, almost 60 percent had definite plans to diversify.

⁴ Shipments of raw whole milk in containers of not less than 10 gallons to Class I milk distributors.

Data gathered for this study show that the greatest number of non-Grade A manufacturing concerns expanded into the fluid milk field almost immediately after World War II. The 6-year period of 1945-50 was the time of greatest expansion into fluid operations for the 35 reporting manufacturing cooperatives. More than one-third of them entered fluid marketing at this time.

The most frequently given reason for adding ungraded fluid operations was to meet local customers' demands, as reported by three-fourths of the concerns. Some of the firms began bottling milk to provide sales outlets for producers

who wished to shift from farm-separated cream to whole milk. Others shifted to obtain higher sales prices for farmers whose milk could qualify for fluid use. Still others saw a trend developing in their area toward Grade A milk production and added fluid operations as a "first step" in gearing themselves to the trend (table 2).

However, ungraded fluid milk operations fell very much into the sideline category. Reporting non-Grade A concerns manufactured about 90 percent of their milk that qualified for fluid use, whereas slightly more than half of the Grade A butterfat reached fluid outlets.

Current Role of Grade A Cooperatives

SOME of the largest dairy manufacturing cooperatives handling Grade A milk in the United States are located in the 3-State area surveyed, but small cooperatives greatly outnumber the large ones. Their sizes range from cooperatives handling 2 or 3 million pounds of milk equivalent⁵ annually to those handling over 200 million pounds.

Median figures have been used in making comparisons because of wide variation in size of reporting concerns. The median refers to the midpoint in a series, where half of the cooperatives in the series fall above and half below.

Annual Milk Intake

In Iowa, half of the dairy manufacturing cooperatives with Grade A fluid milk operations had an an-

nual intake of more than 35 million pounds of milk equivalent and half had an annual intake below this figure. This annual intake included butterfat from other dairy firms as well as directly from farmer-members.

Average intake of reporting cooperatives in Wisconsin was much greater, and their annual receipts of butterfat from all sources amounted to a median of 87.7 million pounds of milk equivalent. Cooperatives reporting from Minnesota outnumbered those reporting from each of the other two States, but averaged the smallest in size. The midpoint value of these cooperatives was 20.6 million pounds annual intake of milk equivalent.

A few figures on average volumes, rather than medians, give further evidence of overall industry importance of large-volume firms—that is, those handling 100 million, 200 million, or more pounds

⁵ Butterfat intake (1956) converted to the equivalent of milk testing 3.5 percent butterfat.

Table 2.—Reasons cooperatives added ungraded fluid milk operations

| Item | Minne- sota | Iowa | 2-State total ¹ |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------|-------------------------------|
| Number of cooperatives reporting----- | 34 | 9 | 43 |
| Reasons ² : | <i>Number of cooperatives</i> | | |
| To meet local customers' demands----- | 24 | 8 | 32 |
| To provide sales outlet for producers wishing to shift from farm-separated cream to whole milk | 14 | 5 | 19 |
| To prevent loss of producer-members wanting to have a fluid milk sales outlet----- | 10 | 5 | 15 |
| To obtain higher sales price for producers' fluid milk----- | 15 | ----- | 15 |
| To meet competition from another dairy firm buying fluid milk in the area----- | 8 | 5 | 13 |
| Belief in trend toward Grade A milk production and in the need for the association to "gear" itself to this trend----- | 6 | 2 | 8 |
| To find new outlets for butterfat in face of declining market for butter----- | 5 | 2 | 7 |
| To supply fluid milk to distributor(s) during periods of short supply----- | 2 | ----- | 2 |

¹ Postal card inquiry indicated 4 cooperatives in Wisconsin marketed ungraded fluid milk in 1956, but none responded to questionnaire.

² Number of reasons exceeds number of cooperatives because most cooperatives gave more than 1 reason.

a year. In the 3-State area, the average receipts of 79 reporting Grade A cooperatives, based on the 1956 annual intake of butterfat from all sources, was 73.6 million pounds of milk equivalent, as compared with the median quantity of 32.9 millions pounds. This difference of 41 million pounds resulted from the extreme range between smallest and largest cooperatives and the effect of the largest cooperatives on the average volume.

Plant Characteristics

What characterizes manufacturing co-ops that have entered Grade A milk marketing? How have they integrated fluid handling with their manufacturing operations? The following data give insight into degree and type of diversification.

Of 96 plants associated with 81 manufacturing cooperatives receiv-

ing Grade A milk directly from dairy farmers, 44 plants had added milk bottling to a manufacturing operation and 43 had combined bulk sales of milk or cream or both with manufacturing. Only five plants had Grade A receiving stations, and only four had milk bottling plants. Thus we see that after these cooperative plants expanded into Grade A fluid operations, the number selling bulk milk about equaled the number bottling milk.

Almost all reporting concerns manufactured butter as a primary operation. Other major products included spray nonfat dry milk, roller nonfat dry milk, and ice cream. Taking a glance at the whole picture, we find that nearly half of the United States' total milk output in 1957 was used in manufactured products and amounted to 62.3 billion pounds. Of the total

production, 22.9 percent was manufactured into creamery butter, 2.2 percent into farm butter, 11 percent into cheese, 4.9 percent into evaporated and condensed milk, 6.8 percent into ice cream and other frozen food products, and 1.6 percent into miscellaneous factory products.⁶

The large-volume associations handling Grade A milk had diversified the most. Since the start of Grade A handling, reporting cooperatives had increased the number of functions performed and switched their emphasis from glass to paper containers. When they began handling Grade A milk, only 5 percent sold bulk milk, cream, and bottled milk products. By 1956, the number had tripled.

Separate intake systems for Grade A and manufacturing grade

⁶ AGRICULTURAL STATISTICS, U.S. Dept. of Agr., 1958, p. 380.



Butter was a primary manufactured product of nearly all reporting cooperatives. Increasing amounts of reserve Grade A milk were being channeled into products such as butter, cheese, ice cream, and nonfat dry milk, providing farmers a market for this milk and assuring quality-conscious consumers of higher grade dairy products.

milk were used in 9 of 10 bulk selling plants and 5 of 10 bottling plants. Two-thirds of the remaining plants with a single intake line for both Grade A and ungraded milk used a Y-dump—that is, they used receiving facilities with separate or divided weigh tanks.

Federal recommendations, State regulations, and local ordinances made it difficult to use the same intake system for both grades, although it was still done in some places. Wisconsin recommended that all dairies constructing new buildings or altering existing buildings install separate Grade A facilities.

Producer Characteristics

The survey showed that the daily volume shipped by Grade A producers was twice as much daily as that by non-Grade A producers, indicating that Grade A herds were larger and had greater productive capacity (table 3). However, the non-Grade A producers outnumbered the producers of Grade A milk 2 to 1. Therefore, each group shipped about the same yearly volume of milk.

Manufacturing concerns with large memberships usually had a large proportion of Grade A producers. In the 12 biggest concerns, with 1,000 or more members each, 46 percent of the farmers shipped Grade A milk. Over half the reporting cooperatives, however, had fewer than 400 patrons each, with 39 percent of these patrons shipping Grade A milk.

Both non-Grade A cooperatives and their individual farmer-members were small in output volume when compared with Grade A cooperatives and their individual farmer-members. Nine out of 10

Table 3.—Producer-members classified by number shipping, volume of annual shipments, and volume shipped per day, 1956

| Item | Minne- sota | Wiscon- sin | Iowa | 3-State total |
|-------------------------------------------------|----------------|----------------|--------|------------------|
| <i>Number</i> | | | | |
| Dairy manufacturing cooperatives reporting..... | 35 | 30 | 14 | 79 |
| Number of members shipping: | | | | |
| Grade A milk..... | 3, 614 | 7, 434 | 1, 526 | 12, 574 |
| Manufacturing milk..... | 6, 833 | 13, 443 | 4, 632 | 24, 908 |
| Farm-separated cream..... | 3, 020 | 57 | 3, 452 | 6, 529 |
| Total..... | 13, 467 | 20, 934 | 9, 610 | 44, 011 |
| <i>Million pounds</i> | | | | |
| Annual volume shipped: ¹ | | | | |
| Grade A milk..... | 772. 4 | 1, 502. 2 | 261. 4 | 2, 536. 0 |
| Manufacturing milk..... | 723. 1 | 1, 454. 3 | 362. 3 | 2, 539. 7 |
| Farm-separated cream..... | 155. 5 | 6. 7 | 162. 0 | 324. 2 |
| Total..... | 1, 651. 0 | 2, 963. 2 | 785. 7 | 5, 399. 9 |
| <i>Pounds</i> | | | | |
| Volume per member per day: | | | | |
| Grade A milk..... | 585 | 554 | 464 | 553 |
| Manufacturing milk..... | 290 | 296 | 214 | 279 |
| Farm-separated cream..... | 141 | 319 | 129 | 136 |
| All members..... | 336 | 388 | 224 | 336 |

¹ Butterfat intake for 1956 is converted here to 3.5 percent milk equivalent.

ungraded firms had fewer than 400 patrons each, while only half of the Grade A concerns had as few as 400 patrons. No non-Grade A firm

in this study reported membership of as many as 800, while 16 Grade A cooperatives had from 800 to more than 1,200 members.

Advantages and Disadvantages of Grade A Handling

CONVERSION to Grade A standards resulted in higher returns for the dairy farmers by offering them access to fluid markets and wider market opportunities to their cooperatives. This did not mean that these concerns were able to market all, or even most, of their Grade A milk in fluid outlets. Nor did it mean that they encountered few problems.

Adequacy of Markets

The price paid for milk going into fluid uses has traditionally

been higher than the price paid for milk being used in manufacturing products. This is true because it generally has cost more to produce milk qualified for fluid uses, particularly where Grade A quality applies, and greater costs are involved in transporting and storing so bulky and perishable a product as fluid milk. Because of these greater costs, higher prices are necessary to develop local supplies and to move milk from more distant sources.

Once a dairy manufacturing cooperative decides to enter Grade A



Once a dairy manufacturing concern started handling Grade A milk, finding adequate fluid outlets became a major problem. Over half the Grade A milk channeled into fluid markets by reporting cooperatives was shipped in bulk form to fluid distributors . . .

milk marketing, it faces the vital necessity of finding adequate fluid outlets, either through bulk sales or by adding a bottling operation.

About half of the Grade A butterfat received by cooperatives surveyed never reached fluid markets but had to be manufactured instead. This finding is based on a 4-month average of data for February, May, August, and November 1956.

Wisconsin's dairy manufacturing cooperatives were able to channel only half of their Grade A milk into fluid outlets. Minnesota and Iowa presented a brighter picture. Seventy percent of the Grade A butterfat obtained by dairy manufacturing concerns in these States went to fluid markets.

Manufacturing concerns in this region found that bulk sales offered their major marketing opportunity for Grade A milk, and they shipped over half of the total amount as

bulk Grade A. Twenty-seven percent was sold as bulk cream, whereas bottled milk and cream sales accounted for the remaining 18 percent.

Bottled milk and cream sales were the main market outlet for Grade A milk in Minnesota, where bottling absorbed nearly two-thirds of the Grade A milk going into fluid use. In Wisconsin bulk cream sales accounted for a third of that State's Grade A fluid milk.

Of course, effects of seasonability of production must be analyzed in considering the adequacy of fluid milk markets for Grade A milk. Milk production fluctuates throughout the year, but demand remains more uniform with gradual variations. Each dairy product has its own demand pattern, causing ever-changing competition among the many uses for milk.

During the four months analyzed for this study—February, May, August, and November—only about two in five cooperatives averaged 80 percent or more fluid use of Grade A milk. About a third sold between 40 and 80 percent in fluid



. . . bottling milk, and cream accounted for only 18 percent of the fluid Grade A milk sales.



Grade A milk commands premium prices largely because of the high standards under which it must be produced—standards requiring clean, well-ventilated and -lighted barns such as this one. Farmers selling Grade A can milk to associations surveyed received an average differential of 51 cents a hundredweight over the value of ungraded can milk.

markets, while the remaining 30 percent of the firms averaged less.

Since nearly a third of the co-operatives were unable to market even 40 percent of their Grade A milk in fluid outlets, marketing opportunities for Grade A milk require more thorough investigation before additional manufacturing concerns should add such operations.

Price Relationship

The problem of what price relationship is justified between Grade A and manufacturing grade milk has long existed. This report does not attempt to solve that problem, although data presented here may help clear up some misconceptions.

Grade A Differential

Our data showed that some manufacturing co-ops had difficulty paying Grade A prices as high as those

offered by their competitors. Certain dairymen have felt that returns from sales of manufacturing grade milk help to maintain higher prices paid to producers of Grade A milk during flush production periods when Grade A milk might not command a higher value in nonregulated markets. A few of the co-operatives surveyed retained a fraction of the higher Grade A prices paid in fall and winter, using this to supplement lower Grade A prices in excess supply periods.

In the area surveyed, keen competition intensified the problem of keeping a proper price relationship between the two types of milk. Both cooperative and other dairy firms had attempted to persuade patrons to convert to Grade A milk production by promising higher prices for the Grade A milk. However, among cooperatives that already had more Grade A milk than they could market for fluid use, this

was an expensive way to hold or build patronage.

During the 4 months studied, the cooperatives paid an average price differential of 51 cents for Grade A can milk over the value of ungraded can milk. Producers shipping Grade A bulk milk got an extra premium averaging 10 cents. Grade A bulk shippers thus received, on the average, 61 cents a hundredweight more for their milk than producers of manufacturing grade can milk.

Considering current prices for Grade A milk paid in selected Federal order markets, we may conclude that the Grade A differential paid by cooperatives were based on natural market differences as to the various uses of milk and were not created merely to satisfy Grade A producers. However, individual cooperatives may have paid their members more for Grade A milk than returns justified. This may have occurred particularly in cases where there were large plant costs in handling Grade A milk. Since plant operating costs were not studied, comparison of cooperative prices with those of Federal order markets are based on average amounts the reporting cooperatives paid to producers.

Bulk Premiums

By November, 1956, 30 of 81 reporting cooperatives received both can and bulk Grade A milk. More than 80 percent of these 30 concerns paid a bulk milk premium. Slightly more than two in five paid bulk premiums of 6 to 12 cents a hundredweight. The next most common rate was from 18 to 24 cents. In many cases, premiums were more properly "incentive payments." In others, premiums in-

dicated actual or expected reductions in milk receiving costs.

An average range of 92 cents a hundredweight separated highest and lowest average prices paid for Grade A milk during the 4 months the cooperatives were studied. The range for manufacturing grade milk was 45 cents. The wider range for Grade A milk comes partly from higher transportation costs in some areas.

The current uptrend in Grade A milk production in this area places strong economic pressures on many manufacturing cooperatives to find more markets for fluid milk as quickly as possible. Even greater instability in Grade A milk prices could result as market outlets receive increasing volumes of approved fluid milk.

The three case studies present further information on pricing, particularly on patronage refunds and hauling subsidies.

Marketing Problems

As previous statements indicate, supply in excess of demand and various forms of marketing competition ranked high on the list of three out of five cooperatives reporting major problems in marketing Grade A milk. Problems varied between firms selling Grade A milk in bulk and those bottling it.

For cooperatives marketing bulk Grade A milk, oversupply was the most commonly acknowledged problem, listed by a third of the cooperatives responding. Dairy firms selling bottled milk reported too many other dairy concerns were competing with them in their marketing area. Among other problems, handling seasonal surpluses or shortages figured importantly to

a number of associations. Others considered high hauling costs, slow farm bulk pickup, quality maintenance, and surplus milk in traditionally deficit supply areas among their major problems.

Plant operating difficulties were more common among bottling firms than among those selling fluid milk in bulk form. Chief among these

difficulties were quality maintenance and defective paper cartons resulting in leakage. Seasonality of production also gave them some trouble.

For examples of how some cooperatives made use of Federal milk marketing orders to find outlets for their Grade A milk, see the case studies that follow.

Experiences of Three Grade A Co-ops

THE general survey of 124 associations indicated certain areas needing additional analysis and delineation. Averages of data often failed to show important details needed to understand specific marketing methods and institutions. Therefore, we conducted detailed case studies on three cooperatives.

The following case studies are not necessarily typical of all dairy manufacturing organizations in this area. They do, however, tell why three farmer-owned manufacturing concerns started Grade A fluid milk marketing, how they proceeded, and what they think the future holds. And we know that many other concerns in the Midwest are encountering similar problems and experiences.

We made these individual studies mainly to give management of dairy farmer organizations and others a better understanding of potential marketing opportunities as reflected by area trends and changing institutional factors.

The three concerns observed were in Wisconsin. Principal factors determining their selection were: (1) These firms sold raw, whole milk in bulk form to fluid milk distributors already established. Our general survey had indicated that

this was the primary outlet for Grade A fluid milk handled by manufacturing cooperatives in this region. (2) They were located in the State where the greatest volume of Grade A milk was channeled into fluid milk outlets. (3) They were willing to cooperate in every way in the case studies. (4) They had handled Grade A milk long enough to make a proper analysis.

Case Study One

For anonymity, the dairy manufacturing cooperative described in this case study will be known as Cooperative X. Cooperative X—manufacturing chiefly butter and spray powder—also supplied Grade A fluid milk to Class I milk distributors regulated under Federal order number 41, the “Chicago marketing area,” including Chicago and 64 nearby townships.

During the 4-year period, 1955–58, X could sell approximately only 8 percent of its Grade A milk in bulk form to handlers in this marketing area. Of the rest, less than 1 percent went to local bottling firms. Almost 91 percent had to be used in the plant’s butter and nonfat dry milk manufacturing.

Entry Into Grade A

When.—In December 1947, X began receiving Grade A can milk that met Chicago Board of Health regulations and Wisconsin Health Department standards. By 1954, daily intake of can Grade A milk averaged 80,000 pounds, nearly 40 percent of the total daily milk intake. The cooperative adopted bulk handling methods in May 1955.

Of the plant's total Grade A intake in 1955—about 45 million pounds—bulk tank milk shipments accounted for only 9 percent. During the following year, however, 61 percent of the plant's Grade A supply was received in bulk form; by 1957, 77 percent, and by 1958, 91 percent of all Grade A milk was shipped to X in bulk pickup tankers.

Since only nine Grade A producers were shipping can milk in July, 1958, the plant decided to close its Grade A can intake. These nine producers left X, but the plant expected the loss in volume to be more than offset by reduced operating costs. Thus by August 1958, all the association's Grade A milk was being unloaded at the bulk intake.

The association estimated that by 1965, 80 percent of its total milk receipts would be Grade A milk, and that all shippers, both Grade A and ungraded, would be using bulk handling methods.

Why.—The cooperative expanded from manufacturing dairy products into marketing Grade A fluid milk primarily because of procurement competition. Many area dairy firms had begun handling Grade A milk and offering prices and marketing opportunities that X could not meet without diversifying.

Then, too, the association felt that it must "gear" itself to the trend developing toward Grade A milk production. More and more of its own ungraded producers were wanting to switch to Grade A, mainly because of low manufacturing prices as compared with Grade A prices.

Cost of Converting to Can Intake.—Facilities for receiving Grade A milk in cans cost this concern approximately \$37,000. Major items of equipment and their value in December, 1947, were ⁷

| Item | Approximate cost |
|--------------------------------------------------|-------------------|
| Straightway can washer (10 cans per minute)----- | \$5, 059. 73 |
| Incoming and return power conveyor----- | 3, 697. 20 |
| Plate cooler----- | 5, 482. 65 |
| Wash sink----- | 247. 50 |
| 2 positive-displacement type pumps----- | 217. 25 |
| 2 2,500-gallon holding tanks-- | 7, 420. 28 |
| Receiving vat----- | 899. 22 |
| Weighing tank----- | 1, 027. 45 |
| Dial scale----- | 835. 88 |
| Compressor (air)----- | 486. 65 |
| Building----- | 11, 109. 31 |
| | <hr/> 36, 483. 12 |

All of X's manufacturing grade producers shipped milk in cans during 1958. However, bulk milk premiums received by Grade A shippers were beginning to appeal to many producers of ungraded milk, particularly to those with sizeable dairy farms. Thus, by April 1959, 13 of the plant's 189 producers of manufacturing grade

⁷ For a detailed, comprehensive study of costs involved when a concern decides to add a new Grade A receiving room or to alter the old one, see State College of Washington, Agricultural Experiment Stations, ECONOMIES OF SCALE IN THE OPERATION OF CAN AND TANK MILK RECEIVING ROOMS, WITH SPECIAL REFERENCE TO WESTERN WASHINGTON, Technical Bulletin 12, May 1954.

milk had adopted bulk handling methods.

Changing from can to bulk shipments was accomplished more quickly by Grade A producers. Within a year after the plant started receiving Grade A bulk tank milk, the majority of Grade A producers were using this method of transporting their milk. Although bulk receiving was not begun until May of 1955, daily Grade A can milk shipments that year were reduced about 11,000 pounds, pointing up the immediate effect of bulk intake.

Cost of Converting to Bulk Intake.—X started receiving Grade A bulk milk in 1955 with no additional plant cost, because facilities were already set up for loading tank transport trucks with raw whole milk. These facilities were thus available for unloading the farm bulk pickup tankers.

Bulk loading equipment included approximately 10 feet of 2-inch sanitary tubing that projected from a port opening in the Grade A can intake room. A farm pickup tanker could unload there by pumping milk directly to Grade A milk storage tanks.

The manufacturing grade can-intake had a washing area for trucks. After Grade A bulk tankers unloaded at the "A" intake, they were washed on the other side of the plant—at the ungraded can intake.

When non-Grade A milk patrons started switching to bulk operations in January 1959, X decided to convert the manufacturing grade milk can-intake into a Grade A bulk milk intake by bricking up side walls and installing doors to enclose the washing area. This cost \$2,360 and was the chief expense.



This truck is being loaded at the farm with cans of Grade A milk destined for a nearby dairy manufacturing cooperative. For plants already receiving such Grade A milk in cans, cost of additional facilities for receiving Grade A milk in bulk form was insignificant.

The old Grade A can receiving room with its bulk receiving facilities was then used exclusively for receiving manufacturing grade can and bulk milk. After unloading at this intake, the few bulk tankers that hauled ungraded milk were washed at the Grade A bulk milk intake.

Present Operations

A detailed analysis of present operations of X will show how well this association has met the needs of its farmer-members through marketing Grade A fluid milk.

Procurement.—This concern's maximum procurement radius for Grade A milk extended 25 miles. Its manufacturing grade milk supply area was somewhat smaller.

The cooperative had five principal competitors with about the same average procurement radius. The extensive overlapping of these

plants' Grade A supply areas was significant although fairly typical of interfirm overlapping in Midwest dairy manufacturing plants. Such strong competition partially explains the recent uptrend in Grade A milk production in an area traditionally handling manufacturing grade milk.

In 1958, 11 trucks with enclosed, insulated, box bodies served the can routes of the association. Average capacity of these trucks was 72 to 100 10-gallon cans, equal to 5,400 to 7,500 pounds of milk. Independent haulers owned these trucks, and hauled manufacturing grade milk exclusively.

By the end of 1958, seven bulk farm pickup tankers, also owned by independent contract haulers, served the bulk routes of X. Each tank truck hauled an average load of 12,500 pounds of Grade A milk.

Members and Volume.—During the period studied, X's Grade A producers decreased from 202 to 182, but average daily delivery per producer increased and resulted in a 14 percent greater annual Grade A intake in 1958 than 1955.

Over the same period, manufacturing grade producers decreased from 261 to 214, with only a small increase in average daily shipments per producer. In 1958 annual ungraded receipts were 9 percent less than those received in 1955. These two variable factors—decreasing numbers and increasing output per patron—caused X's total annual milk intake in 1958 to exceed the intake in 1955 by 5 percent (appendix tables 1 and 3).

During the 4-year period analyzed, an average number of 188 farmer-members producing Grade A milk shipped 190 million pounds of approved milk to the association

plant. Members producing manufacturing grade milk, averaging 241 in number, shipped 120 million pounds of ungraded milk to the cooperative over the same period. The supply of Grade A milk ranged from an average daily delivery of 609 pounds in 1955 to 771 pounds in 1958, a 27 percent increase in daily delivery per producer. Over the same period, ungraded milk deliveries per producer ranged from an average of 322 pounds in 1955 to 358 pounds in 1958, an increase of only 11 percent (appendix table 1).

Delivery of this milk varied widely with the seasons. The monthly index⁸ showing the average daily deliveries for Grade A producers from 1955 through 1958 fell to an average of 71 during the fall months of low production, but rose to an average of 119 during the spring months of flush milk production (appendix table 2).

In comparing seasonal variations of Grade A deliveries with manufacturing grade deliveries, one finds that Grade A shipments had a more nearly uniform pattern. For the low production months of 1955–1958, shipments of ungraded milk declined to an average of 73. During the high production months for these four years, the shipments of ungraded milk advanced to an average index of 128.

Although such seasonal fluctuation is undesirable, it occurs in most of the cooperatives contacted in this survey. Using educational means to encourage and assist members in overcoming the seasonality problem as well as offering price incentives will help to establish more nearly

⁸ This index is the average daily deliveries per producer each month divided by the mean of the 12 monthly average daily deliveries per producer.

uniform seasonal patterns of milk production and delivery.⁹

In attempting to level out production, the Chicago market adopted a base-excess payment plan¹⁰ in September 1954. During the first base-excess "pay out" period (March through June 1955) X's average daily delivery per producer of Grade A milk was 49 percent greater than it was during the September through November base-making period. By 1958, however, the average daily deliveries had leveled out to the point where the production of the flush spring months was only 20 percent greater than of the low fall months. X's producers of manufacturing grade milk did not receive any such price incentive for eliminating seasonal variations in milk shipments.

Fluid Milk Marketing Program.—

Of the 190 million pounds of Grade A milk shipped to X during the period surveyed, 173 million pounds never reached fluid outlets but had to be manufactured into

butter and nonfat dry milk. Only 17 million pounds were sold in bulk to bottling concerns. In 1955, only 1 percent of X's Grade A milk went into fluid outlets. In 1956, the amount increased to 12 percent and in 1957 to 13 percent; but in 1958, it dropped to 9 percent (appendix table 3).

This association received 120 million pounds of manufacturing grade milk, bringing its total volume received to 310 million pounds. Of all milk shipped to this cooperative, 94 percent was used in manufactured products, and 59 percent of this milk was Grade A.

Early in its venture into Grade A fluid milk handling, X qualified as a pool plant under Chicago's Federal Order No. 41.¹¹ By participating in the Chicago market-wide pool, the association's Grade A producers received the Federal order blend price the year around, including total value of Class I and Class II milk sold on the market as well as values of other classes. This price equalization enabled the cooperative to pay its Grade A producers the same price as that paid by other concerns located in the same general area.

Any concern, no matter where it was located, could become fully regulated under any Federal order if it operated in accordance with standards given in the order.

⁹ A comprehensive discussion of the various means of approaching this problem appears in the following publications: Krause, S. F. MEETING SEASONAL PROBLEM OF DAIRY COOPERATIVES THROUGH EDUCATION, Bulletin 9, Farmer Cooperative Service, June 1956; and Krause, S. F. SEASONAL MILK PRICING PLANS, Bulletin 12, Farmer Cooperative Service, November 1958.

¹⁰ The base-excess plan is a pricing program designed to even out production by increasing milk output during the fall months and decreasing milk shipments in the spring months. Under this plan, each producer sets a base by determining his average daily milk output for certain short-production months (the base-forming period). Each producer is then paid the base price for all milk produced up to the total of his base in the following few flush months, or in some instances, for an entire year (base-operating period). During this period all milk produced above the base is paid for at a lower or "excess" price.

¹¹ During the past several years, Wisconsin's out-of-State milk shipments have averaged about 8 percent of the State's total milk production—about 1,386 million pounds out of the 18 billion pounds produced in 1958. The main outlet for this milk was the Chicago market. In 1958, over three-fourths of Wisconsin's total outshipments of fluid milk went to Chicago. See Wisconsin and U.S. Department of Agriculture, Crop and Livestock Reporting Service, WISCONSIN DAIRYING, Vol. X, No. 8, p. 1, June 1959.

In 1955, X participated in the Chicago regulated fluid milk market and paid its Grade A producers the market blend price. However, less than 1 percent of its total Grade A receipts was shipped to a Chicago area handler. Small amounts from July to November went to two local cooperatives bottling milk. Altogether, 99 percent of X's Grade A milk receipts was processed into manufactured products, primarily butter and non-fat dry milk (appendix table 3).

Until September 1, 1956, when the pool plant provisions were changed, X could participate in the pool by shipping or "offering to ship" at least 50 percent of its Grade A milk to Chicago area processing and packaging plants during September, October, and November. By qualifying during the 3 fall months, the concern was treated as a pool member during the following December through August period. Within these 9 months, the plant did not have to make any minimum shipments, but it had to maintain a health permit for Grade A milk.

In 1955 X actually shipped only

6.2 percent of its Grade A milk receipts to a Chicago handler in September and nothing during the other two qualifying months. This cooperative used the alternative of "offering to ship." A concern may have "offered" its entire supply of Grade A producer receipts during this period even though it "actually" shipped only a small quantity of milk.

All offers to sell had to state the price and terms of the sale and the amount of plant charges which the seller asked. Generally this was the Class I price for 3.5 percent milk, f.o.b. plant, plus a specified plant charge, plus or minus the butterfat differential, minus adjustment for plant location.

Most of the offers to sell during the three qualifying months of 1955 contained a plant handling charge of 65 cents or over (table 4). In most cases, these higher charges relative to other months amounted to more than actual costs and reflected the shorter milk supply during this period. The higher charges also indicated that many country plants surveyed that were primarily engaged in manufacturing operations

Table 4.—Plant charges demanded by 22 country supply plants submitting offers to ship Grade A milk to Chicago bottling plants during the 3 qualifying months, 1955

| Handling charge | September | October | November | 3-month total |
|-----------------------|-----------|---------|----------|---------------|
| <i>Cents per cwt.</i> | | | | |
| 60..... | 10 | 0 | 0 | 10 |
| 65..... | 12 | 11 | 16 | 39 |
| 70..... | 2 | 5 | 3 | 10 |
| 75..... | 2 | 5 | 4 | 11 |
| 80..... | 1 | 0 | 1 | 2 |
| Total..... | 27 | 21 | 24 | 72 |

Source: Compiled from statistics of the Federal Milk order No. 41 REPORTER, April 1956.

| Year | August | September | October | November | 3-month average |
|----------------------------------|--------|-----------|---------|----------|-----------------|
| <i>Percent of Grade A intake</i> | | | | | |
| 1955----- | 0 | 6. 2 | 0 | 0 | 2. 1 |
| 1956----- | 0 | 51. 9 | 51. 4 | 50. 8 | 51. 4 |
| 1957----- | 0 | 53. 6 | 51. 5 | 52. 9 | 52. 7 |
| 1958 ¹ ----- | 41. 4 | 41. 0 | 40. 4 | 0 | 40. 9 |

¹ Requirements were changed, making August, September and October the 3-month qualifying period and reducing to 40 percent the volume of Grade A milk shipments required during this period to qualify the plant for the following 9 months.

had little or no desire to furnish Grade A fluid milk to the market during this short production period.

As of September 1, 1956, manufacturing plants desiring to remain in the pool had to actually ship at least half of their Grade A receipts during the 3-month fall qualifying period. The above tabulation indicates the percentage of X's Grade A milk intake shipped to Chicago Class I milk distributors during the 3-month qualifying period for each year from 1955 through 1958.¹²

Pricing

Appendix table 4 compares Grade A milk prices and unregulated manufacturing grade milk prices paid by the association during the 4 years analyzed. These are prices at the plant before hauling charges were deducted and do not include premiums, hauling subsidies, or patronage refunds.

Base Prices.—X's shippers of Grade A milk were participating in a market-wide fluid milk pool and were receiving from the pool

the uniform price per hundred-weight with adjustments for plant location and butterfat content. This pool price averaged 4 percent per hundredweight more in 1956 than 1955. During 1957 and 1958, however, it averaged 4 percent and 8 percent less than in 1956, as supplies of Grade A milk increased.

During this same period, the graded-ungraded differential declined from 42 to 29 cents. Should the differential between approved and unapproved milk continue at this level or decrease, the rate of conversion from ungraded to Grade A milk production would probably decline.

The cooperative's producers of manufacturing grade milk were paid a certain price per hundred-weight for milk of a specified butterfat content with adjustments for variations from that specified amount. In calculating these variations, the cooperative evaluated both the fat and nonfat solid components of the ungraded milk. The method used was patterned after the R. F. Froker and C. M. Hardin pricing plan.¹³

X's pricing policy called for setting current monthly advances for

¹² As of November 1, 1959, 124 plants participating in the Chicago fluid milk pool were receiving Grade A milk from producers. Of these plants, 65 percent qualified on the basis of shipments to regulated bottling plants. See Federal Milk Order No. 41 REPORTER, Chicago, Ill., November 1959, p. 1.

¹³ University of Wisconsin, Wisconsin Agricultural Experiment Station. PAYING PRODUCERS FOR FAT AND SOLIDS—NOT-FAT IN MILK, Research Bulletin 143, 1942.

ungraded milk at about the same level paid by other nearby concerns. Any net margins not needed for capital purposes were distributed annually as patronage refunds. X stressed to its producers the value of these refunds and considered them an important factor in maintaining loyalty of both manufacturing and Grade A milk producers.

Other Payments.—In 1955, the cooperative's patronage refunds averaged 10 cents per hundredweight for producers of Grade A milk and 9 cents for producers of manufacturing grade milk (appendix table 5). From 1956 to 1958, these payments were lower.

When all supplemental payments were considered, X's producers of Grade A milk received additional payments averaging 14 cents per hundredweight in 1955, 16 cents in 1956, 27 cents in 1957, and 32 cents in 1958. These payments increased steadily partly because of the growing number of producers receiving bulk milk premiums in 1956 and also because of the special pool premiums paid in 1957 and 1958. By September 1958, all Grade A producers were receiving a 15 cent bulk milk premium and 2 cent hauling subsidy.¹⁴ Patronage refunds averaged 6 cents and special pool premiums 10 cents per hundredweight for 1958 (appendix table 5).

Producers delivering manufacturing grade milk received only patronage dividends and hauling subsidies during the 4 years surveyed. While hauling subsidies averaged 5 cents each year, patronage refunds fluctuated widely resulting

in average supplemental payments of 14 cents in 1955, 6 cents in 1956, 11 cents in 1957, and 10 cents in 1958.

When the association added these supplemental payments, sometimes called "indirect price payments," to both Grade A and manufacturing grade milk prices, the average graded-ungraded differential for 1955 was not changed (appendix table 4). However, by 1956, the differential increased 10 cents; by 1957, 16 cents; and by 1958, 22 cents. Therefore, the true differential averaged 58 cents in 1956, 49 cents in 1957, and 51 cents in 1958. Grade A price differentials this size provide a strong incentive for many producers of manufacturing grade milk to qualify as Grade A milk producers.

Case Study Two

Case study two analyzed a dairy manufacturing concern, Cooperative Y, supplying raw, whole Grade A fluid milk in bulk form to Chicago handlers and local milk bottlers.

For the 4-year period studied, Y was able to channel about 40 percent of its total Grade A intake into fluid milk markets. Grade A markets did not increase as rapidly as the quantity of milk received, however. While the volume of Grade A milk sold each year remained fairly steady, the volume received had nearly doubled by 1958. This resulted in a 177 percent increase in the amount of Grade A milk used in manufactured products between 1955 and 1958.

Entry Into Grade A

When.—In October 1952, Y began handling fluid Grade A can

¹⁴ Association payments to haulers for transporting milk from farms to plants in addition to what they received from the farmer.

milk qualified by the Chicago Board of Health and the Wisconsin Health Department. By 1955, this concern had 92 producers of Grade A can milk and 583 producers of manufacturing grade can milk. The Grade A farmers were supplying 29 percent of total milk receipts. The firm began receiving bulk milk in May 1956.

Of the plant's total Grade A intake in 1956—22 million pounds—bulk milk shipments accounted for 10 percent. The next year, the association received 31 percent of its Grade A milk in bulk; and by 1958, it received 52 percent of all its Grade A milk in bulk.

In June 1959, Y was still receiving milk through three separate intakes—Grade A can, manufacturing grade can, and Grade A bulk. Because of the quick rate of conversion to bulk shipping, this co-operative planned to close its Grade A can-intake system by early 1960, thus substantially reducing operating costs.

Located in rough, hilly terrain, this cooperative had many producers operating smaller milking units than were to be found in areas 25 to 35 miles away. Thus, Y converted to bulk handling methods about a year later than many other firms operating in that general area.

Why.—Cooperative Y expanded from manufacturing dairy products into marketing Grade A fluid milk primarily to maintain plant volume. Many of its larger patrons had been leaving the cooperative as they qualified as Grade A shippers and found outlets for their milk at plants handling Grade A milk.

Cost of Converting to Can Intake.—Facilities for receiving

Grade A milk in cans cost this concern approximately \$28,000. Major items of equipment and their value in October 1952, were as follows:¹⁵

| <i>Item</i> | <i>Approximate cost</i> |
|---------------------------------------------------------------------------------|-------------------------|
| Straight line can washer (12 cans a minute)----- | \$5, 212. 31 |
| Power conveyor and track---- | 3, 112. 39 |
| Plate cooler----- | 885. 77 |
| Stainless steel pipe wash tank and sanitary power pipe washer----- | 618. 79 |
| Stainless steel sanitary pump----- | 299. 48 |
| Sanitary pipe and fitting rack----- | 378. 98 |
| 2 5,000-gallon storage tanks-- | 12, 932. 68 |
| Weigh can----- | 1, 333. 66 |
| Dial scale----- | 562. 60 |
| Wall and tile construction in the shop building for Grade A receiving room----- | 2, 681. 40 |
| | <hr/> 28, 018. 06 |

At the time of this study, Y was shipping all its manufacturing grade milk in cans. Producers of ungraded milk in 1958 individually shipped, on the average, 47 percent less a day than producers of Grade A milk did. This smaller daily output of non-Grade A dairy farmers explains their lack of interest in bulk handling methods. These producers, in most instances, were too small to afford converting to Grade A; nor did their volume of output justify bulk handling.

Cost of Converting to Bulk Intake.—Facilities for receiving Grade A bulk milk cost Y only \$2,678, since the only construction needed was a brick and tile partition for separating the washing area for bulk tankers from the rest of the building.

The plant's Grade A receiving room was already equipped for

¹⁵ See footnote 7, page 14, for more information regarding costs involved in converting to Grade A (bulk or can) milk receiving and handling.

loading tank transport trucks with raw, whole milk. These same facilities—consisting mainly of a pump and 2-inch sanitary tubing leading to storage tanks—were put in use for unloading bulk milk pickup tankers.

With the introduction and swift adoption of bulk handling methods during the last 5 to 10 years, few plants today would consider adding a Grade A can intake system with its high cost of equipment and high operating cost. Concerns now converting to Grade A handling who install only bulk receiving facilities usually save from \$20,000 or more beyond the cost of installing can receiving equipment and then converting to bulk.

Present Operations

Taking a closer look at this association's present procurement and marketing operations will show how it is serving its farmer-members through Grade A fluid marketing.

Procurement.—This concern's maximum procurement radius for Grade A milk extended 20 miles—almost the same as its manufacturing grade milk supply area.

Y had three principal competitors for Grade A milk, all farmer-owned organizations. Their procurement areas were similar in size to Y's, and all overlapped extensively in some areas.

Twenty-two trucks with enclosed box bodies hauled the members' can milk to the association plant in 1958. Average capacity of these trucks was 90 to 100 cans, equal to 6,750 to 7,500 pounds of milk. The association owned only two of these trucks; independent haulers, the rest. Five trucks hauled manufac-

turing grade milk exclusively. The other 17 trucks carried both Grade A and ungraded milk in cans. Four Grade A farmers were still hauling their own supply to the plant, and three ungraded dairy farmers were doing the same.

By the end of 1958, three bulk farm pickup tankers, owned by independent contract haulers, served Y's producers. These tank trucks each hauled an average load of 14,500 pounds of Grade A milk. Truckers for this concern received a hauling subsidy, to supplement the fee per hundredweight charged producers. Nearby cheese factories—many owning their own trucks—were charging such low hauling rates that Y offered similar rates to meet this competition. This meant paying a hauling subsidy to compensate for longer distances traveled by its independent haulers.

Members and Volume.—For the 4 years being analyzed, Cooperative Y's Grade A producers increased from 92 to 135, and the average daily delivery per producer also increased (appendix table 6). Over the same period, however, manufacturing grade producers decreased from 583 to 435, with only a nominal increase in average daily output per producer.

Data showed that an average of 112 Grade A patrons shipped 100 million pounds of approved milk to this cooperative during 1955 to 1958. Manufacturing grade patrons, averaging 527 in number, shipped 235 million pounds of ungraded milk to the concern over the same period. Average daily delivery per producer of Grade A milk ranged from 538 pounds in 1955 to 667 pounds in 1958, a 24 percent increase in daily delivery. Over the same period, ungraded milk deliv-

ery per producer ranged from an average of 288 pounds in 1955 to 316 pounds in 1958, only a 10 percent increase (appendix table 6).

A few farmers were still shipping small amounts of farm-separated cream to Y in 1958. This plant received the cream at the ungraded milk intake and dumped it with manufacturing grade milk.

Volume of farm-separated cream received from patrons, 1955 through 1958, is shown below:

| Year | Cream intake | Milk equivalent (3.5 milk) |
|------------------------|--------------|----------------------------|
| <i>Thousand pounds</i> | | |
| 1955----- | 60.1 | 500.0 |
| 1956----- | 62.1 | 461.5 |
| 1957----- | 53.2 | 395.0 |
| 1958----- | 29.2 | 199.9 |

Deliveries of whole milk varied more widely on a seasonal basis for the ungraded than the Grade A milk. The monthly index of average daily deliveries for Grade A producers from 1955 through 1958 fell to an average of 85 during September, the month of lowest production, and rose to an average of 124 in May, the month of flush production (appendix table 7).

For the same period, non-Grade A milk shipments declined to an average index of 70 during the fall month of lowest production, but advanced to an average index of 148 during the highest production month.¹⁶

The Chicago market base-excess plan—adopted in September 1954—was one principal reason why Y's

Grade A milk producers showed a more nearly level-production pattern. In March through June 1955, the plant's average daily intake per shipper was 41 percent greater than it was during the fall base-making period (September through November). By 1958, average daily deliveries had leveled out to only 28 percent more in the spring than in the fall months.

Fluid Marketing Program.—Of the 100 million pounds of Grade A milk shipped to Y during the 4 years surveyed, 38 percent was sold as raw, whole milk in bulk form to milk distributors (appendix table 8). Almost all of this was believed to be used in fluid milk products. The remaining 62 percent went into the plant's butter-powder operation. The firm manufactured all of its 235 million pounds of ungraded milk.

In 1955, slightly over half of Y's Grade A milk went into fluid milk outlets (appendix table 8). By 1956, the percentage dropped to 41; in 1957, 35; and in 1958, only 30 percent reached fluid markets, because the volume of Grade A milk receipts increased. Marketings for fluid use, however, did not change significantly.

Altogether, the association sold 38 million pounds of Class I milk and manufactured 297 million pounds, primarily into butter and spray nonfat dry milk. Milk going into the plant's manufacturing operation was 21 percent Grade A.

Management of Y stated that blending Grade A with ungraded skim milk in the drying operation had improved the quality of their powder by lowering the bacterial count. The direct microscopic clump count, used in determining

¹⁶ See footnote 9, page 17, for additional information on the seasonal problem.

quality of nonfat dry milk, reflected this improvement.¹⁷

Y had two fluid outlets for its Grade A milk—a local dairy purchasing all of its milk for bottling from that cooperative, and a Chicago milk distributing concern, enabling the cooperative to participate in the fluid milk pool under the Chicago order. The local dairy paid the Class I price, established by the order, for all the milk it bought from the cooperative. Sales were arranged through oral agreements.

A manufacturing plant desiring to participate in the Chicago regulated fluid milk pool in 1956 and 1957 was required to ship at least half of its approved milk to Chicago area milk distributors during 3 fall qualifying months. Before this time, plants could submit “offers to ship” and participate in the pool even though it shipped only small supplies during the qualifying period.

By 1958, as a result of more milk being sent to the city than needed for fluid purposes during the low production months, the requirements for the 3 fall months were reduced to 40 percent of Grade A receipts. For the other 9 months,

participating plants were not required to make any minimum shipments but only needed to maintain a Grade A health permit.

The tabulation on the following page shows the percentage of Y's Grade A milk intake that went to Chicago Federal milk order milk bottling concerns during the 3-month qualifying period, 1955–1958.

Pricing

Four years of Y's Grade A and ungraded milk prices are compared in appendix table 9. These are base prices paid at the plant and do not include additional payments, such as special premiums, hauling subsidies, etc. However, these supplemental payments do significantly affect producers' net returns and will be considered in the following discussion to provide a true picture of Grade A and ungraded milk pricing.

Base prices.—Federal milk order No. 41 affected Grade A operations of Y. Grade A prices shown in appendix table 9 are weighted average pool prices adjusted to the cooperative's location. Average yearly Grade A prices declined from \$3.50 per hundredweight in 1956 to \$3.22 in 1958, reflecting the increasing supply of Grade A milk.

During the 4 spring months of 1957, the differential between Grade A and manufacturing grade prices averaged only 18 cents, and for the same period in 1958, 17 cents. The yearly average differential for 1957 was 30 cents, compared with 28 cents for 1958. Differentials this small offer little incentive for producers of ungraded milk in this area to convert to Grade A milk production.

Y's ungraded milk pricing policy

¹⁷ Cooperative Y had been regularly selling substantial quantities of its powder to a packaging plant under Government contract. This powder, to be packaged in 4½-pound containers for the National School Lunch Program, could not show a direct microscopic count exceeding 75 million per gram. These sales netted a slightly greater margin than those made directly to Commodity Credit Corporation. CCC tightened its purchasing standards on April 1, 1959, by buying only powder that showed a direct microscopic bacterial count not exceeding 250 million per gram. Prior to this date, 300 million per gram had been permissible. According to its management, Y was seeking to build a reputation as a producer of high grade spray nonfat dry milk and was watching closely its raw milk quality.

| Year | August | September | October | November | 3-month average |
|----------------------------------|--------|-----------|---------|----------|-----------------|
| <i>Percent of Grade A intake</i> | | | | | |
| 1955----- | 0 | 47. 6 | 55. 6 | 50. 4 | 51. 2 |
| 1956----- | 0 | 54. 9 | 55. 6 | 51. 5 | 54. 0 |
| 1957----- | 0 | 54. 5 | 52. 8 | 52. 7 | 53. 3 |
| 1958 ¹ ----- | 42. 3 | 45. 2 | 45. 7 | 0 | 44. 4 |

¹ The 3-month period during which a plant could qualify for the succeeding 9 months was changed to August, September, and October in 1958.

was not based purely on market returns in the short run, even though this was the determining factor over the long term. This concern attempted to pay the average price of firms it considered principal competitors. During much of 1958, however, Y's manufacturing grade price fell below that of a major competing firm.

Other Payments.—Patrons delivering ungraded milk received only patronage refunds and hauling subsidies during the 4 years surveyed. These payments decreased from an average of 13 cents per hundredweight in 1955 to 6 cents in 1958, primarily because of smaller dividends (appendix table 10).

Producers of Grade A milk averaged 14 cents a hundredweight in additional payments in 1955. By 1958, these payments increased to an average of 25 cents, because of bulk milk premiums started in May 1956, and special pool premiums paid in 1957 and 1958.

When supplemental payments were added to Grade A and manufacturing grade milk prices shown in appendix table 9, the graded-ungraded differential was increased by 1 cent in 1955, 5 cents in 1956, 11 cents in 1957, and 19 cents in 1958. Therefore, the true Grade A differential paid to producers averaged 40 cents in 1955, 50 cents

in 1956, 41 cents in 1957, and 47 cents in 1958.

Case Study Three

Case study three concerns a dairy cooperative chiefly manufacturing American cheddar cheese. Cooperative Z, as it is called in this report, also supplied Grade A fluid milk to bottled milk distributors located mainly in the Chicago marketing area.

During the 4-year period of this survey, Z sold approximately 47 percent of its Grade A fluid milk in bulk form to handlers in this marketing area. About 1 percent went to nearby milk distributors. The rest was manufactured.

Entry Into Grade A

When.—In January 1952, this cooperative started handling fluid Grade A milk, meeting Chicago Board of Health regulations and Wisconsin Health Department standards. Starting with a can-intake system, the cooperative adopted bulk handling methods in July 1955.

Of the plant's total Grade A intake in 1955—23 million pounds—bulk milk shipments accounted for only 6 percent. Bulk conversion progressed rapidly, however, and by 1956, 32 percent of the concern's Grade A receipts came from bulk shippers; by 1957, 50 percent; and

by 1958, 62 percent of all Grade A milk was received as bulk.

Why.—Z expanded from manufacturing dairy products into marketing Grade A fluid milk primarily as a defensive measure—to compete with other milk plants trying to increase their Grade A milk volume.

Also, the cooperative believed it could not afford to ignore the trend developing toward Grade A milk production. Many of the cooperative's producers of ungraded milk wanted to convert to a Grade A inspection basis, but also wanted to remain with Z. As a result, these members were influential in persuading the board of directors that the cooperative should install facilities for handling and marketing Grade A milk.

Cost of Converting to Can Intake.—Facilities for receiving Grade A milk in cans cost this concern approximately \$26,000. Major

items of equipment and their value in January 1952 were as follows:¹⁸

| Item | Approximate cost |
|-----------------------------------------------------|-------------------|
| Straightway can washer (10-12 cans per minute)----- | \$3, 810. 86 |
| Can conveyors (power-type)----- | 4, 070. 24 |
| Milk cooler----- | 4, 960. 00 |
| Pipe washer----- | 528. 05 |
| 3 pumps (positive-displacement type)----- | 695. 53 |
| 2 storage tanks (43,000 lbs. each)----- | 8, 252. 90 |
| Receiving tank----- | 793. 02 |
| Weigh tank----- | 1, 156. 98 |
| Scale----- | 329. 04 |
| Pipe rack----- | 165. 00 |
| Sanitary piping and valves--- | 872. 83 |
| | <hr/> 25, 634. 45 |

Although Z did not especially encourage its members to switch from can to bulk shipments, members were well aware of bulk premiums being offered in the area and were rapidly converting. When the association began receiving Grade A

¹⁸ See footnote 7, page 14, for more information regarding costs involved in converting to Grade A (bulk or can) milk receiving and handling.



The bulk tanker shown above is picking up Grade A milk for a manufacturing cooperative that was able to expand into Grade A handling by installing only bulk receiving facilities. This association realized substantial savings as compared with plants that first had to install Grade A can receiving equipment, than to convert to bulk.

bulk milk in July 1955, Grade A can shipments immediately began to decrease.

Also, in 1955, bulk handling methods were beginning to appeal strongly to producers of ungraded milk as well as to members shipping Grade A milk. And once an ungraded milk producer equips himself for bulk handling, there is a strong incentive for him to go all the way and make any additional investments necessary to qualify as a producer of Grade A milk. Thus, management of Z felt that rapidly emerging bulk handling of milk would tremendously affect improvement of milk quality in the large manufacturing milk area of the Midwest.

Data showed that all members of Cooperative Z buying bulk tanks were either already producing Grade A milk or were converting to a Grade A inspection basis soon after they adopted bulk handling. Therefore, very little manufacturing grade milk was being received as bulk.

Z started paying a bulk premium of 25 cents per hundredweight to be in line with its competitors. Reductions in milk receiving costs did not justify so large a premium, but competitive pressure made it necessary. Based solely on cost reductions, a justified premium would have been about 10 cents per hundredweight, the cooperative estimated. Plant records indicated that during most of 1958, the bulk milk premium had been reduced to 15 cents per hundredweight.

Cost of Converting to Bulk Intake.—No additional plant expenses were incurred. Z already had facilities for loading and washing tank transport trucks that hauled bulk milk to Chicago milk distributors. Therefore, when the association

started receiving bulk milk in July 1955, the farm pickup tankers were able to use these facilities for unloading.

Present Operations

A more detailed look at present operations of this cooperative will show how it is serving its farmer-members through Grade A fluid marketing.

Procurement.—This concern's maximum procurement radius for Grade A milk extended 21 miles, as compared with 18 miles for ungraded milk. Nearly all members reported that three or four milk procurement trucks passed by their farms each day. This indicated the extent of overlapping of supply areas. The association had four principal competitors, whose average procurement radius slightly exceeded that of its own.

Eleven insulated, van-type, can-hauling trucks served members in 1958 by hauling milk to the association plant. The average capacity of these trucks was 80 to 90 cans, averaging 75 pounds of milk per can (equal to 6,000–6,750 pounds of milk). Four bulk farm pickup tankers, owned by independent contract haulers, served the bulk routes of Z in 1958. These tank trucks hauled an average load of 12,200 pounds of Grade A milk. Although the plant's haulers were independent operators, the cooperative believed that it had their loyalty and could depend on them.

All can truckers were combining loads of Grade A and manufacturing grade milk for procurement efficiency. The Chicago Health Department permits hauling approved milk with unapproved can milk, although some city ordinances prohibit it. None of the plant's patrons delivered their own milk.

Members and Volume.—During the period analyzed Z's Grade A producers increased in number and average daily delivery per producer, resulting in a 68 percent greater annual Grade A intake in 1958 than 1955. During the same period, manufacturing grade producers decreased in number, but average daily delivery per producer increased enough to make annual ungraded receipts 5 percent more in 1958 than in 1955.

Z's total milk intake—Grade A and ungraded—in 1958 exceeded 1955's by 36 percent (appendix tables 11 and 13). In this highly competitive procurement area, such an increase in milk receipts suggests that the cooperative has been securing favorable returns and has the confidence of its members.

For the 4-year period under analysis, an average number of 115 Grade A farmer-members shipped a total of 119 million pounds of approved milk to the association plant. Manufacturing grade patrons, averaging 162 in number, shipped 84 million pounds of ungraded milk to the cooperative over the same period. The supply of Grade A milk ranged from an average daily delivery of 625 pounds in 1955 to 747 pounds in 1958, a 20 percent increase in daily delivery. Ungraded milk deliveries ranged from an average of 351 pounds in 1955 to 398 pounds in 1958, an increase of only 13 percent (appendix table 11).

Delivery of both grades of milk had wide seasonal variations. The monthly index (based on average daily deliveries) for Grade A producers from 1955 through 1958 fell to an average of 59 during the fall month of lowest production (appendix table 12), but rose to an

average of 123 during the spring's flush production months.

Even with this 2-to-1 seasonal variation, Grade A shipments were more nearly uniform than shipments of manufacturing grade milk. For the low production months of 1955–1958, ungraded shipments declined to an average of 51. During the high production months for these 4 years, the ungraded shipments advanced to an average index of 133.

A base-excess plan was adopted by the Chicago market in September 1954 as a means of evening out production. During March through June 1955—the first base-excess pay out period—Z's average daily delivery per Grade A producer was 59 percent greater than it was during the base-making period of September through November. By 1958, average daily shipments had leveled out somewhat to only 35 percent more in the spring than in the fall months.

Fluid Marketing Program.—When Z started handling Grade A Milk, it decided the risk was too great to establish a bottling operation of its own. Instead, it chose the alternative of supplying approved raw whole milk to organizations already established in the Grade A fluid distribution business. The association found buyers in the Chicago marketing area and in two nearby dairies.

Of the 120 million pounds of approved milk handled by Z during this 4-year survey, 48 percent was sold in bulk to bottling concerns. The remaining 52 percent of "surplus" Grade A was used in the plant's American cheese operation. All of the non-Grade A milk received (84 million pounds) was also manufactured into American cheese.

In 1955, 82 percent of Z's Grade A milk was sold in bulk fluid form to Class I milk distributors (appendix table 13). Since then the percentage of fluid utilization has steadily declined. By 1956, 73 percent of the Grade A intake went into fluid outlets; in 1957, 38 percent; and in 1958, only 17 percent.

Altogether, the association channeled 57 million pounds of milk into fluid outlets and manufactured 146 million pounds as American cheese during this period. The milk going into cheese was 42 percent Grade A.

This use of large quantities of Grade A milk in manufactured dairy products is being duplicated throughout the Midwest as more and more producers in this traditionally manufacturing milk area convert to production of Grade A milk. Possible broad implications of this development are that the evolution from ungraded to Grade A milk production, with its attendant raising of milk quality, will substantially sustain and expand markets for Midwestern milk and its products. Findings of this study neither confirm nor deny this premise.

Amended and more restricted pooling requirements of the Chicago Federal order in September 1956, are discussed on pp. 17-19. Z's manager pointed out that this tightening of pool plant require-

ments had increased competition among country Grade A plants in maintaining their Chicago fluid outlets.

Chicago Class I distributors were able to obtain milk at lower handling charges during the fall qualifying period than previously when pool plant requirements were under terms of "offers to ship." One result was a substantial loss of revenue by country plants. The plant manager stated that the highest handling allowance they were able to negotiate in 1956 was 36 cents per hundredweight. During the 3 qualifying months in 1955, 86 percent of the offers to sell contained a handling charge of 65 cents or more (table 4).

The following tabulation shows the percentage of this association's Grade A milk intake shipped to Chicago fluid milk distributors during the 3-month qualifying period, 1955-1958.

In 1957, this association for the first time in its Grade A marketing experience obtained a written contract with one of its fluid milk buyers. Essential features of the contract were as follows:

1. The contract extended from July 15 to December 15, 1957.
2. The handler guaranteed to buy at least 45,000 pounds of milk daily during this period.

| Year | August | September | October | November | 3-month average |
|----------------------------------|--------|-----------|---------|----------|-----------------|
| <i>Percent of Grade A intake</i> | | | | | |
| 1955----- | 0 | 96.1 | 97.9 | 97.5 | 97.2 |
| 1956----- | 0 | 70.6 | 62.2 | 57.6 | 63.5 |
| 1957----- | 0 | 83.8 | 63.2 | 52.4 | 66.5 |
| 1958 ¹ ----- | 68.9 | 62.5 | 45.8 | 0 | 59.1 |

¹ Pool plant provisions were amended August 1, 1958, making August, September, and October the 3-month qualifying period and reducing to 40 percent the volume of Grade A milk shipments required during this period to qualify the plant as a pool member for the following 9 months.

3. The price promised was the Order 41 Class I price, f.o.b. seller's plant, plus a handling charge of 36 cents per hundredweight.
4. Milk payments were to be made by the 15th of the month following delivery for total value of shipments.
5. The contract contained no provisions for changes by either party.

Pricing

In this primarily manufacturing milk area, Z reported no difficulty maintaining a satisfactory price relationship between Grade A and non-Grade A milk prices. Although Grade A prices were regulated under the fluid milk pool, manufacturing grade operations were unregulated and these returns reflected, as nearly as possible, average prices paid by principal competitors. Appendix table 14 compares, by months, these base prices for the period studied.

Base Prices.—The market-wide pool blend price for Grade A milk averaged more for 1956 than 1955. For 1957 and 1958, however, it averaged less than for 1956. The graded-ungraded differential declined from an average of 41 cents in 1955 to 24 cents in 1958.

For the 4 spring months of 1957, the differential between Grade A and manufacturing grade prices averaged 18 cents, and for the comparable period in 1958, only 15 cents. Management of Z stated that Grade A shippers were very concerned about the decreasing difference in prices between their milk and ungraded milk.

Other Payments.—Producers received only patronage refunds for ungraded milk in 1955 and 1956.

In 1957 and 1958, however, producers received a very small hauling subsidy (less than 1 per cent per hundredweight) in addition to the patronage refunds. Total payments increased from an average of 4 cents per hundredweight in 1955 to 15 cents in 1958 (appendix table 15).

Grade A shippers received bulk milk premiums and patronage refunds in 1955 and 1956. In 1957 and 1958 special pool premiums and minor hauling subsidies were also received in addition to the above payments. Total payments increased from an average of 6 cents per hundredweight in 1955 to 33 cents in 1958. Additional payments such as these indicated that price competition in the procurement of Grade A milk existed.

When the cooperatives added supplemental payments to Grade A and manufacturing grade milk prices shown in appendix table 14, the graded-ungraded differential was increased by 2 cents per hundredweight in 1955, 7 cents in 1956, 13 cents in 1957, and 18 cents in 1958. Therefore, Z's Grade A milk patrons actually received an average of 43 cents more per hundredweight for their milk than the plant's ungraded milk patrons did in 1955, 52 cents more in 1956, 43 cents more in 1957, and 42 cents more in 1958.

Comparison of Case Studies

From comparison of the three case studies, comes keener perception of the similarities and differences in their marketing experiences. X began accepting Grade A milk in cans as early as 1947. Y and Z did not receive can Grade A milk until 5 years later.

By 1956, all three co-ops had adopted bulk handling methods.

In 1958, X received 91 percent of all its Grade A milk in bulk form, while Y and Z received 52 percent and 62 percent, respectively, in bulk.

Grade A Handling

These three manufacturing co-operatives began handling Grade A fluid milk primarily to retain plant volume. Competition in milk procurement accelerated the change. Cost of can-receiving facilities ranged from \$36,000 for X to \$26,000 for Z. Conversion to bulk milk receiving entailed no additional plant cost for Z; X and Y, however, each spent around \$2,500 to convert.

From 1955 to 1958, farmer-members producing Grade A milk increased in number and in average daily deliveries for two of the concerns, Y and Z. The remaining association found Grade A producers were decreasing slightly in number, while the average daily shipments per producer were increasing.

Records of each association showed a greater annual Grade A milk intake in 1958 than in 1955, although the increase varied widely among firms—14 percent for X, 92 percent for Y, and 68 percent for Z.

Members shipping manufacturing grade milk decreased in number in each case, while average daily output per patron rose only slightly. Total milk intake—both Grade A and manufacturing grade—increased 5 percent between 1955 and 1958 for X and Y. Z's total intake in 1958 exceeded 1955's by 36 percent.

Over the 4 years studied, X sold only about 9 percent of its Grade A

milk to fluid milk distributors, while Y sold approximately 40 percent and Z sold about half of their Grade A milk to fluid outlets. However, in each case, the association participated in a fluid milk pool regulated by a Federal order. This assured patrons the uniform blend price per hundredweight for all Grade A milk, no matter how it was used.

Each association reported that the percentage of Grade A milk it sold to fluid markets was declining annually. X dropped from 12 percent in 1955 to 9 percent in 1958. Y sold only 30 percent of its Grade A to fluid markets in 1958 as compared with 54 percent in 1955. However, Z reported the greatest drop—from 82 percent in 1955 to 17 percent in 1958.

Price Differentials

During this same period, plant records of all three concerns showed that their hundredweight price differential between Grade A and ungraded milk also declined substantially. This suggests that the incentive to convert to Grade A production was much less for shippers of manufacturing grade milk in 1958 than in 1955. However, this was not the case.

Dairymen also received certain indirect or supplemental payments—such as hauling subsidies, bulk premiums, special pool premiums, and patronage refunds. When these payments were included in the price computations, the differential between Grade A and ungraded milk prices actually increased for two out of the three concerns.

For X, the price differential rose from 42 cents in 1955 to 51 cents per hundredweight in 1958. Y's price differential showed a similar in-

crease—from 40 cents in 1955 to 47 cents in 1958. Z's price differential declined slightly, from an average 43 cents in 1955 to 42 cents per hundredweight in 1958.

Thus in 1958, Grade A producers received 51 cents a hundredweight more than ungraded milk producers did in X, 47 cents more in Y, and 42 cents more in Z.

Challenge of Diversification

DIVERSIFICATION into Grade A fluid handling by manufacturing concerns requires careful consideration, both by farmer-members and by management. Unless producers and managers know the pitfalls and the promise such diversification holds, full realization of possible benefits is not likely.

Conversion to Grade A fluid milk

marketing is not equally feasible for all manufacturing concerns. Before a program to diversify gets underway, directors and managers should analyze the availability of markets, both local and regional. In some cases, converting to Grade A may not be warranted now, especially in areas where competition is not being felt. However, even in such areas some of the larger un-



Although school children such as these represent an ever-growing market for Grade A fluid milk, this study showed that in many areas supply was exceeding current demand. A careful study of individual markets is necessary before a manufacturing association adds facilities for marketing Grade A fluid milk.

graded dairy farmers are trying to obtain a Grade A market.

While manufacturing cooperatives do not need to begin such conversion programs, they will show foresight if they formulate policies and plans of action in anticipation of producers' demands for Grade A receiving facilities. Cooperatives stand to lose much through reduced returns if they do not prepare themselves to supply the necessary services to members, or if they do not merge with another cooperative that can provide that service. Owners of proprietary dairy concerns may also lose if they are not ready to make prompt decisions.

It is apparent throughout this report that competition in procurement and for volume has been a major drive leading manufacturing cooperatives to add Grade A sidelines. For certain farmer-owned marketing concerns, other courses of action might be more appropriate. Many cooperatives might especially avoid the waste involved in equipping themselves to handle Grade A milk.

The most apparent alternative course of action would be a merger of neighboring cooperatives, making a Grade A market available to producers with less duplication of facilities and marketing services. All producers might be better off this way, assuming an acceptable plan of merger could be worked out. There are other points to consider

than providing full, diversified marketing service, but certainly this point should be recognized.

The possibility of a single quality standard for all milk sometime in the future is still another consideration for manufacturing cooperatives in deciding whether to add a Grade A sideline. Many dairy experts believe the greatest efficiency in fluid milk handling will occur only when all milk meets a single quality standard. This standard will result in simplified inter-State control measures, higher quality milk for consumers, and a more efficient and stabilized industry. These observers see little justification in grading milk by use.

This survey has pointed out many of the major problems cooperatives in particular may face when adding Grade A operations. It has also pointed out that, despite present market inadequacies, managers of most firms handling Grade A milk thought that their fluid sales would increase during the next few years and that they would have more and more farmer-members producing Grade A milk. Many of them have a definite policy of encouragement and financial assistance for conversion to Grade A.

If a single standard for both fluid and manufacturing use should be adopted, those concerns that have foreseen this trend and have taken early action may best serve their members and the dairy industry.

Appendix

DETAILED information on the three case-study cooperatives is presented in the following appendix tables. These tables contain data

obtained from plant records and personal interviews with cooperative officials.

Appendix table 1.—Cooperative X: Average number and daily delivery per producer of Grade A and manufacturing grade milk, 1955–1958 ¹

| Year and month | Grade A producers | | | Manufacturing grade producers | | |
|----------------|----------------------------|------------------------|-----------------------|-------------------------------|------------------------|-----------------------|
| | Number | Average daily delivery | Total receipts | Number | Average daily delivery | Total receipts |
| 1955 | <i>Pounds per producer</i> | | <i>Million pounds</i> | <i>Pounds per producer</i> | | <i>Million pounds</i> |
| January..... | 209 | 639 | 4.1 | 251 | 324 | 2.5 |
| February..... | 207 | 678 | 3.9 | 264 | 327 | 2.4 |
| March..... | 208 | 688 | 4.4 | 262 | 342 | 2.8 |
| April..... | 205 | 697 | 4.3 | 262 | 377 | 3.0 |
| May..... | 199 | 778 | 4.8 | 261 | 437 | 3.5 |
| June..... | 194 | 734 | 4.3 | 261 | 426 | 3.3 |
| July..... | 196 | 577 | 3.5 | 262 | 336 | 2.7 |
| August..... | 197 | 469 | 2.9 | 260 | 280 | 2.3 |
| September..... | 199 | 430 | 2.6 | 261 | 239 | 1.9 |
| October..... | 204 | 488 | 3.1 | 261 | 228 | 1.8 |
| November..... | 205 | 538 | 3.3 | 265 | 254 | 2.0 |
| December..... | 207 | 506 | 3.8 | 260 | 294 | 2.4 |
| Average..... | 202 | 609 | 3.8 | 261 | 322 | 2.6 |
| 1956 | | | | | | |
| January..... | 195 | 686 | 4.1 | 260 | 328 | 2.6 |
| February..... | 195 | 725 | 4.1 | 258 | 359 | 2.7 |
| March..... | 204 | 716 | 4.5 | 257 | 376 | 3.0 |
| April..... | 197 | 752 | 4.4 | 252 | 395 | 3.0 |
| May..... | 171 | 742 | 3.9 | 263 | 402 | 3.3 |
| June..... | 169 | 737 | 3.7 | 259 | 406 | 3.2 |
| July..... | 166 | 586 | 3.0 | 255 | 329 | 2.6 |
| August..... | 164 | 463 | 2.4 | 252 | 264 | 2.1 |
| September..... | 173 | 471 | 2.4 | 255 | 236 | 1.8 |
| October..... | 174 | 598 | 3.2 | 255 | 256 | 2.0 |
| November..... | 176 | 656 | 3.5 | 253 | 271 | 2.1 |
| December..... | 183 | 719 | 4.1 | 250 | 322 | 2.5 |
| Average..... | 181 | 654 | 3.6 | 256 | 328 | 2.6 |
| 1957 | | | | | | |
| January..... | 185 | 782 | 4.5 | 249 | 361 | 2.8 |
| February..... | 184 | 812 | 4.2 | 245 | 388 | 2.7 |
| March..... | 192 | 785 | 4.7 | 238 | 403 | 3.0 |
| April..... | 187 | 820 | 4.6 | 237 | 408 | 3.0 |
| May..... | 187 | 845 | 4.9 | 236 | 442 | 3.2 |
| June..... | 184 | 805 | 4.4 | 238 | 433 | 3.1 |
| July..... | 190 | 624 | 3.7 | 236 | 358 | 2.6 |
| August..... | 188 | 528 | 3.1 | 231 | 293 | 2.1 |
| September..... | 185 | 576 | 3.2 | 227 | 266 | 1.8 |
| October..... | 195 | 655 | 4.0 | 223 | 274 | 1.9 |
| November..... | 194 | 692 | 4.0 | 222 | 282 | 1.9 |
| December..... | 198 | 730 | 4.5 | 223 | 319 | 2.2 |
| Average..... | 189 | 721 | 4.2 | 234 | 352 | 2.5 |
| 1958 | | | | | | |
| January..... | 192 | 795 | 4.7 | 222 | 361 | 2.5 |
| February..... | 187 | 817 | 4.3 | 221 | 383 | 2.4 |
| March..... | 182 | 845 | 4.8 | 220 | 410 | 2.8 |
| April..... | 182 | 853 | 4.7 | 219 | 424 | 2.8 |
| May..... | 181 | 897 | 5.0 | 218 | 450 | 3.0 |
| June..... | 186 | 855 | 4.8 | 220 | 454 | 3.0 |
| July..... | 194 | 652 | 3.9 | 217 | 364 | 2.4 |
| August..... | 185 | 538 | 3.1 | 216 | 285 | 1.9 |
| September..... | 171 | 621 | 3.2 | 210 | 258 | 1.6 |
| October..... | 175 | 730 | 4.0 | 205 | 266 | 1.7 |
| November..... | 176 | 802 | 4.2 | 200 | 296 | 1.8 |
| December..... | 178 | 848 | 4.7 | 195 | 341 | 2.1 |
| Average..... | 182 | 771 | 4.3 | 214 | 358 | 2.3 |

¹ Each farm is considered one producer. Average daily delivery per producer was computed from unrounded data.

Appendix table 2.—Cooperative X: Seasonal indexes of average daily deliveries per producer of Grade A and manufacturing grade milk, 1955–1958

| Month | Grade A | | | | Manufacturing grade | | | |
|----------------------------------------------|---------|------|------|------|---------------------|------|------|------|
| | 1955 | 1956 | 1957 | 1958 | 1955 | 1956 | 1957 | 1958 |
| <i>Monthly index in percent ¹</i> | | | | | | | | |
| January..... | 105 | 105 | 108 | 103 | 101 | 100 | 102 | 101 |
| February..... | 111 | 111 | 113 | 106 | 102 | 109 | 110 | 107 |
| March..... | 113 | 109 | 109 | 110 | 106 | 115 | 114 | 114 |
| April..... | 114 | 115 | 114 | 111 | 117 | 120 | 116 | 118 |
| May..... | 128 | 113 | 117 | 116 | 136 | 122 | 126 | 126 |
| June..... | 121 | 113 | 112 | 111 | 132 | 124 | 123 | 127 |
| July..... | 95 | 90 | 86 | 84 | 104 | 100 | 102 | 102 |
| August..... | 77 | 71 | 73 | 70 | 87 | 80 | 83 | 80 |
| September..... | 71 | 72 | 80 | 81 | 74 | 72 | 76 | 72 |
| October..... | 80 | 91 | 91 | 95 | 71 | 78 | 78 | 74 |
| November..... | 88 | 100 | 96 | 104 | 79 | 83 | 80 | 83 |
| December..... | 98 | 110 | 101 | 110 | 91 | 98 | 91 | 95 |

¹ Average daily deliveries per producer each month divided by the mean of the 12 monthly average daily deliveries per producer.

Appendix table 3.—Cooperative X: Volume of Grade A milk sold in bulk fluid outlets and used in plant's manufacturing operation, 1955–1958

| Year and month | Grade A intake | Bulk sales to | | Total fluid sales | Used in manufacturing | Percentage of Grade A manufactured |
|----------------|----------------|---------------|------------------|------------------------|-----------------------|------------------------------------|
| | | Local firms | Chicago handlers | | | |
| 1955 | | | | | | |
| | | | | <i>Thousand pounds</i> | | <i>Percent</i> |
| January | 4, 140. 8 | 0 | 0 | 0 | 4, 140. 8 | 100. 0 |
| February | 3, 920. 9 | 0 | 0 | 0 | 3, 920. 9 | 100. 0 |
| March | 4, 442. 8 | 0 | 0 | 0 | 4, 442. 8 | 100. 0 |
| April | 4, 282. 8 | 0 | 0 | 0 | 4, 282. 8 | 100. 0 |
| May | 4, 802. 3 | 0 | 0 | 0 | 4, 802. 3 | 100. 0 |
| June | 4, 276. 8 | 0 | 0 | 0 | 4, 276. 8 | 100. 0 |
| July | 3, 498. 8 | 21. 9 | 64. 7 | 86. 6 | 3, 412. 2 | 97. 5 |
| August | 2, 896. 5 | 49. 2 | 0 | 49. 2 | 2, 847. 3 | 98. 3 |
| September | 2, 540. 1 | 116. 5 | 156. 9 | 273. 4 | 2, 266. 7 | 89. 2 |
| October | 3, 085. 3 | 27. 1 | 0 | 27. 1 | 3, 058. 2 | 99. 1 |
| November | 3, 302. 6 | 21. 8 | 0 | 21. 8 | 3, 280. 8 | 99. 3 |
| December | 3, 832. 2 | 0 | 0 | 0 | 3, 832. 2 | 100. 0 |
| Total | 45, 021. 9 | 236. 5 | 221. 6 | 458. 1 | 44, 563. 8 | 99. 0 |
| 1956 | | | | | | |
| January | 4, 143. 5 | 0 | 0 | 0 | 4, 143. 5 | 100. 0 |
| February | 4, 092. 8 | 0 | 0 | 0 | 4, 092. 8 | 100. 0 |
| March | 4, 530. 5 | 0 | 0 | 0 | 4, 530. 5 | 100. 0 |
| April | 4, 459. 0 | 0 | 0 | 0 | 4, 459. 0 | 100. 0 |
| May | 3, 922. 0 | 0 | 0 | 0 | 3, 922. 0 | 100. 0 |
| June | 3, 733. 5 | 0 | 0 | 0 | 3, 733. 5 | 100. 0 |
| July | 3, 019. 9 | 5. 6 | 0 | 5. 6 | 3, 014. 3 | 99. 8 |
| August | 2, 373. 5 | 0 | 0 | 0 | 2, 373. 5 | 100. 0 |
| September | 2, 431. 6 | 0 | 1, 261. 3 | 1, 261. 3 | 1, 170. 3 | 48. 2 |
| October | 3, 233. 4 | 0 | 1, 662. 0 | 1, 662. 0 | 1, 571. 4 | 48. 6 |
| November | 3, 477. 5 | 0 | 1, 765. 2 | 1, 765. 2 | 1, 712. 3 | 49. 2 |
| December | 4, 059. 1 | 0 | 387. 5 | 387. 5 | 3, 671. 6 | 90. 4 |
| Total | 43, 476. 3 | 5. 6 | 5, 076. 0 | 5, 081. 6 | 38, 394. 7 | 88. 3 |

(Continued)

Appendix table 3.—Cooperative X: Volume of Grade A milk sold in bulk fluid outlets and used in plant's manufacturing operation, 1955–1958—(Continued)

| Year and month | Grade A intake | Bulk sales to | | Total fluid sales | Used in manufacturing | Percentage of Grade A manufactured |
|----------------|----------------|-----------------|------------------|-------------------|-----------------------|------------------------------------|
| | | Local firms | Chicago handlers | | | |
| 1957 | | Thousand pounds | | | | Percent |
| January | 4, 527. 2 | 0 | 0 | 0 | 4, 527. 2 | 100. 0 |
| February | 4, 185. 4 | 0 | 0 | 0 | 4, 185. 4 | 100. 0 |
| March | 4, 673. 1 | 0 | 0 | 0 | 4, 673. 1 | 100. 0 |
| April | 4, 597. 7 | 0 | 0 | 0 | 4, 597. 7 | 100. 0 |
| May | 4, 897. 5 | 0 | 0 | 0 | 4, 897. 5 | 100. 0 |
| June | 4, 444. 4 | 0 | 0 | 0 | 4, 444. 4 | 100. 0 |
| July | 3, 673. 9 | 21. 9 | 0 | 21. 9 | 3, 652. 0 | 99. 4 |
| August | 3, 077. 6 | 15. 9 | 147. 2 | 163. 1 | 2, 914. 5 | 94. 7 |
| September | 3, 154. 6 | 58. 1 | 1, 690. 6 | 1, 748. 7 | 1, 405. 9 | 44. 6 |
| October | 3, 996. 3 | 35. 2 | 2, 057. 2 | 2, 092. 4 | 1, 903. 9 | 47. 6 |
| November | 3, 988. 5 | 110. 2 | 2, 108. 9 | 2, 219. 1 | 1, 769. 4 | 44. 4 |
| December | 4, 501. 3 | 20. 6 | 293. 6 | 314. 2 | 4, 187. 1 | 93. 0 |
| Total | 49, 717. 5 | 261. 9 | 6, 297. 5 | 6, 559. 4 | 43, 158. 1 | 86. 8 |
| 1958 | | | | | | |
| January | 4, 718. 9 | 15. 7 | 0 | 15. 7 | 4, 703. 2 | 99. 7 |
| February | 4, 303. 9 | 0 | 0 | 0 | 4, 303. 9 | 100. 0 |
| March | 4, 732. 2 | 0 | 0 | 0 | 4, 732. 2 | 100. 0 |
| April | 4, 706. 1 | 0 | 0 | 0 | 4, 706. 1 | 100. 0 |
| May | 5, 033. 8 | 0 | 0 | 0 | 5, 033. 8 | 100. 0 |
| June | 4, 771. 6 | 0 | 0 | 0 | 4, 771. 6 | 100. 0 |
| July | 3, 919. 7 | 0 | 0 | 0 | 3, 919. 7 | 100. 0 |
| August | 3, 087. 5 | 14. 3 | 1, 278. 8 | 1, 293. 1 | 1, 794. 4 | 58. 1 |
| September | 3, 187. 7 | 11. 8 | 1, 306. 3 | 1, 318. 1 | 1, 869. 6 | 58. 6 |
| October | 3, 958. 6 | 19. 1 | 1, 599. 1 | 1, 618. 2 | 2, 340. 4 | 59. 1 |
| November | 4, 183. 2 | 8. 3 | 331. 1 | 339. 4 | 3, 843. 8 | 91. 9 |
| December | 4, 694. 2 | 0 | 0 | 0 | 4, 694. 2 | 100. 0 |
| Total | 51, 297. 4 | 69. 2 | 4, 515. 3 | 4, 584. 5 | 46, 712. 9 | 91. 1 |

Appendix table 4.—Cooperative X: Comparison of prices, f.o.b. plant, paid for Grade A and manufacturing grade milk, 1955–1958 ¹

| Year and month | Manufacturing grade milk | Grade A | |
|----------------|---------------------------------------------|-------------------|--------------|
| | | Milk ² | Differential |
| 1955 | Dollars per 100 lbs. of 3.5 percent milk | | Cents |
| January | 3. 01 | 3. 35 | 34 |
| February | 3. 01 | 3. 31 | 30 |
| March | 3. 01 | 3. 15 | 14 |
| April | 2. 95 | 3. 17 | 22 |
| May | 2. 95 | 3. 09 | 14 |
| June | 2. 95 | 3. 16 | 21 |
| July | 2. 95 | 3. 32 | 37 |
| August | 2. 98 | 3. 65 | 67 |
| September | 3. 02 | 3. 73 | 71 |
| October | 3. 05 | 3. 76 | 71 |
| November | 3. 05 | 3. 75 | 70 |
| December | 3. 05 | 3. 57 | 52 |
| Average | 3. 00 | 3. 42 | 42 |

(Continued)

¹ These prices do not include any premiums, hauling subsidies, or patronage refunds.

² Uniform blend or weighted average prices are adjusted for plant location under Federal Milk Order 41. During the base paying months—March, April, May, and June—Grade A milk prices were calculated by weighting base and excess milk prices with the plant's base and excess milk receipts for these months.

Appendix table 4.—Cooperative X: Comparison of prices, f.o.b. plant, paid for Grade A and manufacturing grade milk, 1955–1958 ¹—(Continued)

| Year and month | Manufacturing grade milk | Grade A | |
|----------------|-----------------------------|-----------------------------------------------------|--------------------|
| | | Milk ² | Differential |
| 1956 | | <i>Dollars per 100 lbs. of 3.5 percent milk</i> | |
| January | 3.05 | 3.48 | <i>Cents</i> 43 |
| February | 3.00 | 3.45 | 45 |
| March | 3.00 | 3.29 | 29 |
| April | 3.02 | 3.40 | 38 |
| May | 3.05 | 3.50 | 45 |
| June | 3.05 | 3.52 | 47 |
| July | 3.08 | 3.60 | 52 |
| August | 3.10 | 3.73 | 63 |
| September | 3.15 | 3.70 | 55 |
| October | 3.15 | 3.75 | 60 |
| November | 3.18 | 3.74 | 56 |
| December | 3.10 | 3.55 | 45 |
| Average | 3.08 | 3.56 | 48 |
| 1957 | | | |
| January | 3.08 | 3.49 | 41 |
| February | 3.08 | 3.46 | 38 |
| March | 3.08 | 3.33 | 25 |
| April | 3.08 | 3.31 | 23 |
| May | 3.08 | 3.24 | 16 |
| June | 3.08 | 3.26 | 18 |
| July | 3.09 | 3.37 | 28 |
| August | 3.10 | 3.55 | 45 |
| September | 3.12 | 3.58 | 46 |
| October | 3.14 | 3.57 | 43 |
| November | 3.14 | 3.60 | 46 |
| December | 3.14 | 3.42 | 28 |
| Average | 3.10 | 3.43 | 33 |
| 1958 | | | |
| January | 3.14 | 3.40 | 26 |
| February | 3.14 | 3.38 | 24 |
| March | 3.06 | 3.24 | 18 |
| April | 2.87 | 3.18 | 31 |
| May | 2.85 | 3.08 | 23 |
| June | 2.85 | 3.03 | 18 |
| July | 2.90 | 3.17 | 27 |
| August | 2.95 | 3.37 | 42 |
| September | 3.00 | 3.45 | 45 |
| October | 3.00 | 3.39 | 39 |
| November | 3.00 | 3.36 | 36 |
| December | 3.10 | 3.26 | 16 |
| Average | 2.99 | 3.28 | 29 |

Appendix table 5.—Cooperative X: Average additional payments per hundredweight made to producers for Grade A and manufacturing grade milk, 1955–1958

| Year and month | Grade A milk | | | | Manufacturing grade milk | | |
|----------------|-------------------|--------------------|-------------------|-------|--------------------------|-------------------|-------|
| | Hauling subsidies | Bulk milk premiums | Patronage refunds | Total | Hauling subsidies | Patronage refunds | Total |
| 1955 | | | | | | | |
| January..... | 1.3 | ----- | 9.9 | 11.2 | 4.9 | 9.0 | 13.9 |
| February..... | 1.3 | ----- | 9.8 | 11.1 | 4.9 | 9.1 | 14.0 |
| March..... | 1.3 | ----- | 9.3 | 10.6 | 4.9 | 8.9 | 13.8 |
| April..... | 1.3 | ----- | 9.2 | 10.5 | 4.8 | 8.7 | 13.5 |
| May..... | 1.3 | 0.3 | 9.1 | 10.7 | 4.8 | 8.8 | 13.6 |
| June..... | 1.3 | .4 | 9.3 | 11.0 | 4.8 | 8.8 | 13.6 |
| July..... | 1.3 | .9 | 9.8 | 12.0 | 4.9 | 8.8 | 13.7 |

(Continued)

Appendix table 5.—Cooperative X: Average additional payments per hundredweight made to producers for Grade A and manufacturing grade milk, 1955–1958—(Continued)

| Year and month | Grade A milk | | | | Manufacturing grade milk | | | |
|----------------|--------------------------------|--------------------|-------------------|------------------------------------|--------------------------|--------------------------|-------------------|-------|
| | Hauling subsidies | Bulk milk premiums | Patronage refunds | Total | Hauling subsidies | Patronage refunds | Total | |
| 1955—Continued | | | | | | | | |
| | <i>Cents per hundredweight</i> | | | | | | | |
| August----- | 1. 2 | 1. 4 | 10. 8 | 13. 4 | 4. 9 | 9. 0 | 13. 9 | |
| September----- | 1. 2 | 4. 9 | 11. 4 | 17. 5 | 5. 0 | 9. 4 | 14. 4 | |
| October----- | 1. 2 | 6. 3 | 11. 7 | 19. 2 | 5. 0 | 9. 7 | 14. 4 | |
| November----- | 1. 0 | 7. 1 | 11. 6 | 19. 7 | 4. 9 | 9. 6 | 14. 5 | |
| December----- | 1. 0 | 9. 5 | 11. 1 | 21. 6 | 4. 8 | 9. 4 | 14. 2 | |
| Average----- | 1. 2 | 2. 6 | 10. 2 | 14. 0 | 4. 9 | 9. 1 | 14. 0 | |
| 1956 | | | | | | | | |
| January----- | 0. 8 | 10. 9 | 1. 7 | 13. 4 | 4. 8 | 1. 5 | 6. 3 | |
| February----- | . 8 | 11. 6 | 1. 7 | 14. 1 | 4. 8 | 1. 4 | 6. 2 | |
| March----- | . 8 | 13. 3 | 1. 6 | 15. 7 | 4. 8 | 1. 4 | 6. 2 | |
| April----- | . 6 | 12. 8 | 1. 7 | 15. 1 | 4. 8 | 1. 4 | 6. 2 | |
| May----- | . 6 | 14. 8 | 1. 8 | 17. 2 | 4. 8 | 1. 5 | 6. 3 | |
| June----- | . 5 | 15. 1 | 1. 7 | 17. 3 | 5. 0 | 1. 4 | 6. 4 | |
| July----- | . 5 | 13. 2 | 1. 8 | 15. 5 | 5. 0 | 1. 5 | 6. 5 | |
| August----- | . 5 | 13. 6 | 1. 9 | 16. 0 | 4. 9 | 1. 5 | 6. 4 | |
| September----- | . 5 | 14. 2 | 1. 9 | 16. 6 | 4. 9 | 1. 6 | 6. 5 | |
| October----- | . 5 | 14. 4 | 1. 9 | 16. 8 | 4. 9 | 1. 5 | 6. 4 | |
| November----- | . 4 | 14. 5 | 1. 9 | 16. 8 | 5. 2 | 1. 6 | 6. 8 | |
| December----- | 2. 4 | 14. 4 | 1. 8 | 18. 6 | 4. 9 | 1. 5 | 6. 4 | |
| Average----- | . 7 | 13. 6 | 1. 8 | 16. 1 | 4. 9 | 1. 5 | 6. 4 | |
| | | | | | | | | |
| Year and month | Grade A milk | | | | | Manufacturing grade milk | | |
| | Hauling subsidies | Bulk milk premiums | Patronage refunds | Special pool premiums ¹ | Total | Hauling subsidies | Patronage refunds | Total |
| 1957 | | | | | | | | |
| | <i>Cents per hundredweight</i> | | | | | | | |
| January----- | 2. 4 | 13. 0 | 7. 0 | ----- | 22. 4 | 4. 9 | 6. 0 | 10. 9 |
| February----- | 2. 4 | 13. 2 | 6. 9 | ----- | 22. 5 | 5. 0 | 5. 9 | 10. 9 |
| March----- | . 4 | 15. 1 | 6. 8 | 2. 8 | 25. 1 | 4. 9 | 5. 9 | 10. 8 |
| April----- | . 3 | 15. 6 | 6. 8 | 7. 7 | 30. 4 | 4. 9 | 6. 0 | 10. 9 |
| May----- | . 3 | 15. 9 | 6. 7 | 7. 4 | 30. 3 | 5. 0 | 6. 0 | 11. 0 |
| June----- | . 3 | 16. 1 | 6. 7 | 7. 7 | 30. 8 | 5. 0 | 5. 9 | 10. 9 |
| July----- | . 3 | 16. 1 | 6. 8 | ----- | 23. 2 | 5. 0 | 6. 0 | 11. 0 |
| August----- | . 3 | 15. 3 | 7. 1 | ----- | 22. 7 | 5. 0 | 6. 1 | 11. 1 |
| September----- | . 3 | 15. 5 | 7. 3 | ----- | 23. 1 | 5. 0 | 6. 7 | 11. 7 |
| October----- | . 3 | 15. 3 | 7. 5 | 7. 0 | 30. 1 | 5. 0 | 6. 3 | 11. 3 |
| November----- | . 2 | 15. 5 | 7. 5 | 4. 0 | 27. 2 | 4. 9 | 6. 3 | 11. 2 |
| December----- | . 2 | 15. 6 | 7. 3 | 13. 0 | 36. 1 | 4. 9 | 6. 3 | 11. 2 |
| Average----- | . 6 | 15. 2 | 7. 0 | 4. 1 | 26. 9 | 5. 0 | 6. 1 | 11. 1 |
| 1958 | | | | | | | | |
| January----- | . 2 | 15. 9 | 6. 0 | 13. 0 | 35. 1 | 4. 9 | 5. 1 | 10. 0 |
| February----- | . 2 | 16. 6 | 6. 0 | 13. 0 | 35. 8 | 4. 9 | 5. 1 | 10. 0 |
| March----- | . 2 | 16. 9 | 5. 7 | 9. 6 | 32. 4 | 4. 9 | 5. 0 | 9. 9 |
| April----- | . 1 | 17. 2 | 5. 6 | 10. 6 | 33. 5 | 4. 9 | 4. 6 | 9. 5 |

(Continued)

¹ In base paying months—March, April, May, and June—premium was paid on base milk only.

Appendix table 5.—Cooperative X: Average additional payments per hundredweight made to producers for Grade A and manufacturing grade milk, 1955–1958—(Continued)

| Year and month | Grade A milk | | | | | Manufacturing grade milk | | |
|----------------|-------------------|--------------------|-------------------|------------------------------------|-------|--------------------------|-------------------|-------|
| | Hauling subsidies | Bulk milk premiums | Patronage refunds | Special pool premiums ¹ | Total | Hauling subsidies | Patronage refunds | Total |
| 1958—Con. | | | | <i>Cents per hundredweight</i> | | | | |
| May----- | .1 | 12.9 | 5.3 | 11.0 | 29.3 | 4.9 | 4.6 | 9.5 |
| June----- | .1 | 13.0 | 5.2 | 11.1 | 29.4 | 4.9 | 4.6 | 9.5 |
| July----- | .1 | 13.4 | 5.6 | 13.0 | 32.1 | 5.0 | 4.7 | 9.7 |
| August----- | (2) | 15.0 | 5.8 | 8.0 | 28.8 | 5.0 | 4.8 | 9.8 |
| September----- | 2.0 | 15.0 | 6.0 | 9.0 | 32.0 | 5.0 | 5.0 | 10.0 |
| October----- | 2.0 | 15.0 | 6.0 | 6.0 | 29.0 | 5.0 | 5.1 | 10.1 |
| November----- | 2.0 | 15.0 | 5.9 | 4.0 | 26.9 | 5.0 | 5.1 | 10.1 |
| December----- | 2.0 | 15.0 | 5.8 | 12.0 | 34.8 | 4.9 | 5.2 | 10.1 |
| Average----- | .8 | 15.1 | 5.7 | 10.0 | 31.6 | 4.9 | 4.9 | 9.8 |

² Less than 0.05 cent.

Note: The larger patronage refund received by Grade A producers reflects the higher price paid for their milk. The co-op used the same basis for distributing refunds to both Grade A and manufacturing grade producers—a specified amount per dollar of milk shipped to the plant.

Appendix table 6.—Cooperative Y: Average number of Grade A and manufacturing grade producers and their average daily delivery, 1955–1958¹

| Year and month | Grade A producers | | | Manufacturing grade producers | | |
|----------------|-------------------|----------------------------|-----------------------|-------------------------------|----------------------------|-----------------------|
| | Number | Average daily delivery | Total receipts | Number | Average daily delivery | Total receipts |
| 1955 | | <i>Pounds per producer</i> | <i>Million pounds</i> | | <i>Pounds per producer</i> | <i>Million pounds</i> |
| January----- | 87 | 495 | 1.3 | 565 | 209 | 3.7 |
| February----- | 87 | 525 | 1.3 | 561 | 226 | 3.5 |
| March----- | 91 | 545 | 1.5 | 574 | 256 | 4.6 |
| April----- | 91 | 585 | 1.6 | 579 | 308 | 5.4 |
| May----- | 90 | 700 | 2.0 | 586 | 427 | 7.8 |
| June----- | 90 | 675 | 1.8 | 590 | 443 | 7.8 |
| July----- | 90 | 599 | 1.7 | 602 | 358 | 6.7 |
| August----- | 93 | 506 | 1.5 | 591 | 324 | 5.9 |
| September----- | 96 | 421 | 1.2 | 593 | 265 | 4.7 |
| October----- | 95 | 449 | 1.3 | 590 | 230 | 4.2 |
| November----- | 96 | 463 | 1.3 | 584 | 203 | 3.6 |
| December----- | 98 | 499 | 1.5 | 583 | 202 | 3.6 |
| Average----- | 92 | 538 | 1.5 | 583 | 288 | 5.1 |
| 1956 | | | | | | |
| January----- | 98 | 541 | 1.6 | 592 | 224 | 4.1 |
| February----- | 99 | 565 | 1.6 | 604 | 244 | 4.3 |
| March----- | 101 | 587 | 1.8 | 606 | 283 | 5.3 |
| April----- | 101 | 560 | 1.7 | 611 | 330 | 6.1 |
| May----- | 97 | 676 | 2.0 | 605 | 391 | 7.3 |
| June----- | 104 | 676 | 2.1 | 591 | 435 | 7.7 |
| July----- | 104 | 581 | 1.9 | 579 | 371 | 6.7 |
| August----- | 107 | 488 | 1.6 | 577 | 308 | 5.5 |

See footnote at end of table.

(Continued)

Appendix table 6.—Cooperative Y: Average number of Grade A and manufacturing grade producers and their average daily delivery, 1955–1958 ¹—(Continued)

| Year and month | Grade A producers | | | Manufacturing grade producers | | |
|----------------|-------------------|----------------------------|-----------------------|-------------------------------|----------------------------|-----------------------|
| | Number | Average daily delivery | Total receipts | Number | Average daily delivery | Total receipts |
| 1956—Continued | | <i>Pounds per producer</i> | <i>Million pounds</i> | | <i>Pounds per producer</i> | <i>Million pounds</i> |
| September..... | 110 | 490 | 1. 6 | 566 | 279 | 4. 7 |
| October..... | 111 | 538 | 1. 8 | 562 | 244 | 4. 3 |
| November..... | 113 | 547 | 1. 8 | 534 | 212 | 3. 5 |
| December..... | 113 | 584 | 2. 1 | 547 | 219 | 3. 7 |
| Average..... | 104 | 569 | 1. 8 | 583 | 295 | 5. 3 |
| 1957 | | | | | | |
| January..... | 115 | 609 | 2. 2 | 534 | 241 | 4. 0 |
| February..... | 115 | 630 | 2. 0 | 529 | 269 | 4. 0 |
| March..... | 115 | 657 | 2. 3 | 525 | 304 | 5. 0 |
| April..... | 114 | 680 | 2. 3 | 524 | 354 | 5. 6 |
| May..... | 115 | 791 | 2. 8 | 520 | 447 | 7. 2 |
| June..... | 115 | 768 | 2. 6 | 510 | 464 | 7. 1 |
| July..... | 116 | 644 | 2. 3 | 518 | 402 | 6. 5 |
| August..... | 115 | 592 | 2. 1 | 502 | 363 | 5. 7 |
| September..... | 117 | 584 | 2. 1 | 505 | 303 | 4. 6 |
| October..... | 120 | 589 | 2. 2 | 478 | 267 | 4. 0 |
| November..... | 120 | 566 | 2. 0 | 464 | 218 | 3. 0 |
| December..... | 120 | 598 | 2. 2 | 462 | 227 | 3. 2 |
| Average..... | 116 | 642 | 2. 3 | 506 | 322 | 5. 0 |
| 1958 | | | | | | |
| January..... | 120 | 638 | 2. 4 | 455 | 251 | 3. 5 |
| February..... | 121 | 675 | 2. 3 | 455 | 276 | 3. 5 |
| March..... | 122 | 701 | 2. 7 | 449 | 317 | 4. 4 |
| April..... | 132 | 707 | 2. 8 | 449 | 362 | 4. 9 |
| May..... | 132 | 817 | 3. 3 | 448 | 441 | 6. 1 |
| June..... | 132 | 810 | 3. 2 | 442 | 465 | 6. 2 |
| July..... | 135 | 658 | 2. 8 | 435 | 383 | 5. 2 |
| August..... | 138 | 587 | 2. 5 | 429 | 321 | 4. 3 |
| September..... | 142 | 574 | 2. 4 | 433 | 277 | 3. 6 |
| October..... | 142 | 605 | 2. 7 | 419 | 242 | 3. 1 |
| November..... | 151 | 597 | 2. 7 | 408 | 225 | 2. 8 |
| December..... | 152 | 634 | 3. 0 | 394 | 238 | 2. 9 |
| Average..... | 135 | 667 | 2. 7 | 435 | 316 | 4. 2 |

¹ Each farm is considered one producer. Average daily delivery per producer was computed from unrounded data.

Appendix table 7.—Cooperative Y: Seasonal indexes of average daily deliveries per Grade A and manufacturing grade producer, 1955–1958

| Month | Grade A | | | | Manufacturing grade | | | |
|---------------------------------------------|---------|------|------|------|---------------------|------|------|------|
| | 1955 | 1956 | 1957 | 1958 | 1955 | 1956 | 1957 | 1958 |
| <i>Monthly index in percent¹</i> | | | | | | | | |
| January..... | 92 | 95 | 95 | 96 | 73 | 76 | 75 | 79 |
| February..... | 98 | 99 | 98 | 101 | 78 | 83 | 83 | 87 |
| March..... | 101 | 103 | 102 | 105 | 89 | 96 | 94 | 100 |
| April..... | 109 | 98 | 106 | 106 | 107 | 112 | 110 | 115 |
| May..... | 130 | 119 | 123 | 122 | 148 | 132 | 139 | 140 |
| June..... | 126 | 119 | 120 | 121 | 154 | 147 | 144 | 147 |
| July..... | 111 | 102 | 100 | 99 | 124 | 126 | 125 | 121 |
| August..... | 94 | 86 | 92 | 88 | 112 | 104 | 113 | 102 |
| September..... | 78 | 86 | 91 | 86 | 92 | 95 | 94 | 88 |
| October..... | 83 | 95 | 92 | 91 | 80 | 83 | 83 | 77 |
| November..... | 86 | 96 | 88 | 90 | 71 | 72 | 68 | 71 |
| December..... | 93 | 103 | 93 | 95 | 70 | 74 | 71 | 75 |

¹ Average daily deliveries per producer each month divided by the mean of the 12 monthly average daily deliveries per producer.

Appendix table 8.—Cooperative Y: Volume of Grade A milk sold in bulk fluid outlets and used in plant's manufacturing operation, 1955–1958

| Year and month | Grade A intake | Bulk sales to | | Total fluid sales | Used in manufacturing | Percentage of Grade A manufactured |
|-----------------|----------------|-----------------|------------------|-------------------|-----------------------|------------------------------------|
| | | Local dairy | Chicago handlers | | | |
| 1955 | | | | | | |
| | | Thousand pounds | | | | Percent |
| January | 1, 334. 7 | 197. 9 | 918. 7 | 1, 116. 6 | 218. 1 | 16. 3 |
| February | 1, 279. 5 | 719. 4 | 214. 4 | 933. 8 | 345. 7 | 27. 0 |
| March | 1, 537. 2 | 238. 9 | 719. 4 | 958. 3 | 578. 9 | 37. 7 |
| April | 1, 600. 6 | 210. 0 | 571. 2 | 781. 2 | 819. 4 | 51. 2 |
| May | 1, 953. 7 | 194. 0 | 41. 5 | 235. 5 | 1, 718. 3 | 88. 0 |
| June | 1, 821. 5 | 186. 3 | 0 | 186. 3 | 1, 635. 2 | 89. 8 |
| July | 1, 670. 4 | 230. 5 | 655. 8 | 886. 3 | 784. 1 | 46. 9 |
| August | 1, 457. 4 | 229. 8 | 929. 3 | 1, 159. 1 | 298. 3 | 20. 5 |
| September | 1, 211. 5 | 271. 5 | 577. 0 | 848. 5 | 363. 0 | 30. 0 |
| October | 1, 323. 1 | 265. 5 | 735. 1 | 1, 000. 6 | 322. 5 | 24. 4 |
| November | 1, 333. 7 | 256. 8 | 672. 1 | 928. 9 | 404. 7 | 30. 3 |
| December | 1, 515. 3 | 255. 7 | 514. 4 | 770. 1 | 745. 2 | 49. 2 |
| Total | 18, 038. 6 | 3, 256. 3 | 6, 548. 9 | 9, 805. 2 | 8, 233. 4 | 45. 6 |
| 1956 | | | | | | |
| January | 1, 643. 5 | 261. 0 | 642. 8 | 903. 8 | 739. 7 | 45. 0 |
| February | 1, 621. 9 | 246. 9 | 446. 8 | 693. 7 | 928. 2 | 57. 2 |
| March | 1, 838. 1 | 255. 9 | 417. 5 | 673. 4 | 1, 164. 6 | 63. 4 |
| April | 1, 697. 7 | 248. 4 | 32. 2 | 280. 6 | 1, 417. 2 | 83. 5 |
| May | 2, 031. 4 | 240. 7 | 0 | 240. 7 | 1, 790. 7 | 88. 2 |
| June | 2, 109. 1 | 209. 3 | 0 | 209. 3 | 1, 899. 8 | 90. 1 |
| July | 1, 873. 3 | 247. 4 | 127. 3 | 374. 7 | 1, 498. 7 | 80. 0 |
| August | 1, 618. 1 | 245. 0 | 926. 7 | 1, 171. 7 | 446. 4 | 27. 6 |
| September | 1, 616. 6 | 249. 3 | 886. 8 | 1, 136. 1 | 480. 5 | 29. 7 |
| October | 1, 852. 5 | 274. 8 | 1, 030. 3 | 1, 305. 1 | 547. 4 | 29. 5 |
| November | 1, 854. 3 | 263. 5 | 954. 2 | 1, 217. 7 | 636. 6 | 34. 3 |
| December | 2, 047. 8 | 253. 8 | 434. 2 | 688. 0 | 1, 360. 1 | 66. 4 |
| Total | 21, 804. 3 | 2, 996. 0 | 5, 898. 8 | 8, 894. 8 | 12, 909. 9 | 59. 2 |

(Continued)

**Appendix table 8.—Cooperative Y: Volume of Grade A milk sold in bulk fluid outlets and used in plant's manufacturing operation, 1955–1958—
(Continued)**

| Year and month | Grade A intake | Bulk sales to | | Total fluid sales | Used in manufacturing | Percentage of Grade A manufactured |
|----------------|----------------|-----------------|------------------|-------------------|-----------------------|------------------------------------|
| | | Local dairy | Chicago handlers | | | |
| 1957 | | Thousand pounds | | | | Percent |
| January----- | 2, 170. 0 | 275. 9 | ----- | 275. 9 | 1, 894. 1 | 87. 3 |
| February----- | 2, 028. 1 | 241. 0 | ----- | 241. 0 | 1, 787. 1 | 88. 1 |
| March----- | 2, 343. 5 | 261. 6 | ----- | 261. 6 | 2, 081. 9 | 88. 8 |
| April----- | 2, 326. 9 | 247. 5 | ----- | 247. 5 | 2, 079. 4 | 89. 4 |
| May----- | 2, 820. 6 | 241. 7 | 41. 9 | 283. 6 | 2, 537. 0 | 89. 9 |
| June----- | 2, 649. 8 | 206. 2 | ----- | 206. 2 | 2, 443. 7 | 92. 2 |
| July----- | 2, 315. 1 | 220. 5 | 903. 9 | 1, 124. 4 | 1, 190. 7 | 51. 4 |
| August----- | 2, 110. 8 | 223. 2 | 1, 071. 4 | 1, 294. 6 | 816. 2 | 38. 7 |
| September----- | 2, 048. 5 | 302. 6 | 1, 115. 9 | 1, 418. 5 | 630. 0 | 30. 8 |
| October----- | 2, 193. 6 | 357. 6 | 1, 159. 4 | 1, 517. 0 | 676. 6 | 30. 8 |
| November----- | 2, 038. 1 | 299. 3 | 1, 073. 8 | 1, 373. 1 | 665. 1 | 32. 6 |
| December----- | 2, 226. 3 | 325. 8 | 897. 1 | 1, 222. 9 | 1, 003. 3 | 45. 1 |
| Total--- | 27, 271. 3 | 3, 202. 9 | 6, 263. 4 | 9, 466. 3 | 17, 805. 1 | 65. 3 |
| 1958 | | | | | | |
| January----- | 2, 375. 1 | 352. 4 | 941. 8 | 1, 294. 2 | 1, 081. 0 | 45. 5 |
| February----- | 2, 285. 6 | 318. 8 | 849. 9 | 1, 168. 7 | 1, 116. 9 | 48. 9 |
| March----- | 2, 652. 7 | 335. 6 | 835. 8 | 1, 171. 4 | 1, 481. 4 | 55. 8 |
| April----- | 2, 820. 9 | 348. 6 | ----- | 348. 6 | 2, 472. 4 | 87. 6 |
| May----- | 3, 342. 9 | 271. 8 | ----- | 271. 8 | 3, 071. 2 | 91. 9 |
| June----- | 3, 208. 1 | 260. 7 | ----- | 260. 7 | 2, 947. 4 | 91. 9 |
| July----- | 2, 753. 1 | 339. 2 | ----- | 339. 2 | 2, 413. 9 | 87. 7 |
| August----- | 2, 511. 8 | 326. 7 | 1, 062. 1 | 1, 388. 8 | 1, 123. 2 | 44. 7 |
| September----- | 2, 445. 8 | 348. 7 | 1, 106. 3 | 1, 455. 0 | 991. 0 | 40. 5 |
| October----- | 2, 662. 3 | 352. 1 | 1, 217. 7 | 1, 569. 8 | 1, 092. 6 | 41. 0 |
| November----- | 2, 705. 9 | 344. 4 | ----- | 344. 4 | 2, 361. 5 | 87. 3 |
| December----- | 2, 988. 1 | 362. 3 | ----- | 362. 3 | 2, 625. 8 | 87. 9 |
| Total--- | 32, 752. 3 | 3, 961. 3 | 6, 013. 6 | 9, 974. 9 | 22, 778. 3 | 69. 5 |

Appendix table 9.—Cooperative Y: Comparison of prices, f.o.b. plant, paid for Grade A and manufacturing grade milk, 1955–1958 ¹

| Year and month | Manufacturing grade milk | Grade A | |
|----------------|-----------------------------|-------------------------------------------------|--------------------|
| | | Milk ² | Differential |
| 1955 | | <i>Dollars per 100 lbs. of 3.5 percent milk</i> | |
| January----- | 2. 95 | 3. 29 | <i>Cents</i> 34 |
| February----- | 2. 95 | 3. 25 | 30 |
| March----- | 2. 95 | 3. 11 | 16 |
| April----- | 2. 95 | 3. 12 | 17 |
| May----- | 2. 95 | 3. 04 | 09 |
| June----- | 2. 95 | 3. 11 | 16 |
| July----- | 2. 96 | 3. 26 | 30 |
| August----- | 2. 95 | 3. 59 | 64 |
| September----- | 3. 00 | 3. 67 | 67 |
| October----- | 2. 97 | 3. 70 | 73 |
| November----- | 3. 03 | 3. 69 | 66 |
| December----- | 3. 02 | 3. 51 | 49 |
| Average----- | 2. 97 | 3. 36 | 39 |

See end of table for footnotes.

(Continued)

Appendix table 9.—Cooperative Y: Comparison of prices, f.o.b. plant, paid for Grade A and manufacturing grade milk, 1955–1958 ¹—(Continued)

| Year and month | Manufacturing grade milk | Grade A | |
|----------------|-----------------------------|-------------------------------------------------|--------------|
| | | Milk ² | Differential |
| | | <i>Dollars per 100 lbs. of 3.5 percent milk</i> | |
| 1956 | | | <i>Cents</i> |
| January | 2. 97 | 3. 42 | 45 |
| February | 2. 97 | 3. 39 | 42 |
| March | 3. 00 | 3. 24 | 24 |
| April | 3. 00 | 3. 35 | 35 |
| May | 3. 00 | 3. 43 | 43 |
| June | 3. 00 | 3. 44 | 44 |
| July | 3. 05 | 3. 54 | 49 |
| August | 3. 05 | 3. 67 | 62 |
| September | 3. 10 | 3. 64 | 54 |
| October | 3. 10 | 3. 69 | 59 |
| November | 3. 15 | 3. 68 | 53 |
| December | 3. 15 | 3. 49 | 34 |
| Average | 3. 04 | 3. 50 | 45 |
| 1957 | | | |
| January | 3. 15 | 3. 43 | 28 |
| February | 3. 10 | 3. 40 | 30 |
| March | 3. 05 | 3. 29 | 24 |
| April | 3. 05 | 3. 27 | 22 |
| May | 3. 05 | 3. 17 | 12 |
| June | 3. 03 | 3. 19 | 16 |
| July | 3. 03 | 3. 31 | 28 |
| August | 3. 03 | 3. 49 | 46 |
| September | 3. 08 | 3. 52 | 44 |
| October | 3. 10 | 3. 51 | 41 |
| November | 3. 10 | 3. 54 | 44 |
| December | 3. 10 | 3. 36 | 26 |
| Average | 3. 07 | 3. 37 | 30 |
| 1958 | | | |
| January | 3. 12 | 3. 34 | 22 |
| February | 3. 12 | 3. 32 | 20 |
| March | 3. 01 | 3. 21 | 20 |
| April | 2. 89 | 3. 12 | 23 |
| May | 2. 85 | 3. 00 | 15 |
| June | 2. 85 | 2. 95 | 10 |
| July | 2. 85 | 3. 11 | 26 |
| August | 2. 87 | 3. 31 | 44 |
| September | 2. 93 | 3. 39 | 46 |
| October | 2. 91 | 3. 33 | 42 |
| November | 2. 90 | 3. 30 | 40 |
| December | 2. 94 | 3. 20 | 26 |
| Average | 2. 94 | 3. 22 | 28 |

¹ These prices do not include any premiums, hauling subsidies, or patronage refunds.

² Uniform blend or weighted average prices are adjusted for plant location under Federal Milk Order 41. During the base paying months—March, April, May, and June—Grade A milk prices were calculated by weighting base and excess milk prices with the plant's base and excess milk receipts for these months.

Appendix table 10.—Cooperative Y: Average additional payments per hundredweight paid to producers for Grade A and manufacturing grade milk, 1955–1958

| Year and month | Grade A milk | | | | Manufacturing grade milk | | |
|----------------|-------------------|--------------------|-------------------|--------------------------------|--------------------------|-------------------|-------|
| | Hauling subsidies | Bulk milk premiums | Patronage refunds | Total | Hauling subsidies | Patronage refunds | Total |
| 1955 | | | | <i>Cents per hundredweight</i> | | | |
| January----- | 2. 1 | ----- | 12. 2 | 14. 3 | 2. 2 | 11. 3 | 13. 5 |
| February----- | 2. 1 | ----- | 12. 0 | 14. 1 | 2. 2 | 11. 1 | 13. 3 |
| March----- | 2. 1 | ----- | 11. 4 | 13. 5 | 2. 1 | 10. 8 | 12. 9 |
| April----- | 2. 2 | ----- | 11. 3 | 13. 5 | 2. 1 | 10. 7 | 12. 8 |
| May----- | 2. 2 | ----- | 11. 2 | 13. 4 | 2. 1 | 12. 0 | 14. 1 |
| June----- | 2. 1 | ----- | 11. 4 | 13. 5 | 2. 1 | 10. 8 | 12. 9 |
| July----- | 2. 1 | ----- | 12. 0 | 14. 1 | 2. 2 | 11. 2 | 13. 4 |
| August----- | 2. 1 | ----- | 13. 2 | 15. 3 | 2. 2 | 11. 0 | 13. 2 |
| September----- | 2. 1 | ----- | 14. 0 | 16. 1 | 2. 1 | 11. 6 | 13. 7 |
| October----- | 4. 2 | ----- | 10. 0 | 14. 2 | 4. 3 | 8. 4 | 12. 7 |
| November----- | 4. 2 | ----- | 9. 9 | 14. 1 | 4. 3 | 8. 5 | 12. 8 |
| December----- | 4. 2 | ----- | 9. 4 | 13. 6 | 4. 4 | 8. 4 | 12. 8 |
| Average----- | 2. 6 | ----- | 11. 5 | 14. 1 | 2. 7 | 10. 5 | 13. 2 |
| 1956 | | | | | | | |
| January----- | 4. 2 | ----- | 9. 0 | 13. 2 | 4. 3 | 8. 1 | 12. 4 |
| February----- | 4. 3 | ----- | 8. 8 | 13. 1 | 4. 4 | 7. 8 | 12. 2 |
| March----- | 4. 3 | ----- | 8. 5 | 12. 8 | 4. 2 | 7. 7 | 11. 9 |
| April----- | 2. 2 | ----- | 8. 7 | 10. 9 | 2. 1 | 7. 6 | 9. 7 |
| May----- | 2. 0 | 1. 9 | 9. 0 | 12. 9 | 2. 1 | 7. 7 | 9. 8 |
| June----- | 1. 9 | 3. 4 | 8. 9 | 14. 2 | 2. 1 | 7. 6 | 9. 7 |
| July----- | 1. 8 | 3. 7 | 9. 2 | 14. 7 | 2. 1 | 7. 8 | 9. 9 |
| August----- | 1. 8 | 3. 8 | 9. 5 | 15. 1 | 2. 2 | 8. 1 | 10. 3 |
| September----- | 1. 7 | 4. 1 | 9. 4 | 15. 2 | 2. 1 | 8. 3 | 10. 4 |
| October----- | 1. 7 | 4. 8 | 6. 6 | 13. 1 | 2. 1 | 6. 0 | 8. 1 |
| November----- | 1. 6 | 5. 1 | 6. 7 | 13. 4 | 2. 2 | 6. 1 | 8. 3 |
| December----- | 1. 9 | 5. 1 | 6. 4 | 13. 4 | 2. 2 | 6. 1 | 8. 3 |
| Average----- | 2. 4 | 2. 7 | 8. 4 | 13. 5 | 2. 7 | 7. 4 | 10. 1 |

(Continued)

Appendix table 10.—Cooperative Y: Average additional payments per hundredweight paid to producers for Grade A and manufacturing grade milk, 1955–1958—(Continued)

| Year and month | Grade A milk | | | | | Manufacturing grade milk | | |
|----------------|--------------------------------|--------------------|-------------------|------------------------------------|-------|--------------------------|-------------------|-------|
| | Hauling subsidies | Bulk milk premiums | Patronage refunds | Special pool premiums ¹ | Total | Hauling subsidies | Patronage refunds | Total |
| 1957 | | | | | | | | |
| | <i>Cents per hundredweight</i> | | | | | | | |
| January----- | 2.2 | 4.6 | 6.2 | 0 | 13.0 | 2.2 | 6.0 | 8.2 |
| February----- | 2.2 | 4.8 | 6.1 | 0 | 13.1 | 2.2 | 5.7 | 7.9 |
| March----- | 2.2 | 5.1 | 5.9 | 3.4 | 16.6 | 2.1 | 5.6 | 7.7 |
| April----- | 2.2 | 5.2 | 5.8 | 8.1 | 21.3 | 2.2 | 5.5 | 7.7 |
| May----- | 2.2 | 5.4 | 5.7 | 7.2 | 20.5 | 2.1 | 5.5 | 7.6 |
| June----- | 2.3 | 5.8 | 5.7 | 7.3 | 21.1 | 2.1 | 5.4 | 7.5 |
| July----- | 2.3 | 6.1 | 5.9 | 0 | 14.3 | 2.1 | 5.5 | 7.6 |
| August----- | 2.2 | 6.3 | 6.3 | 0 | 14.8 | 2.2 | 5.6 | 7.8 |
| September----- | 2.3 | 7.1 | 6.4 | 0 | 15.8 | 2.2 | 5.9 | 8.1 |
| October----- | 2.3 | 7.3 | 4.2 | 7.0 | 20.8 | 2.2 | 3.9 | 6.1 |
| November----- | 2.3 | 7.6 | 4.2 | 4.0 | 18.1 | 2.2 | 4.0 | 6.2 |
| December----- | 2.3 | 7.7 | 4.1 | 13.0 | 27.1 | 2.3 | 3.9 | 6.2 |
| Average-- | 2.2 | 6.1 | 5.5 | 4.2 | 18.0 | 2.2 | 5.2 | 7.4 |
| 1958 | | | | | | | | |
| January----- | 2.4 | 7.8 | 4.0 | 13.0 | 27.2 | 2.3 | 3.7 | 6.0 |
| February----- | 2.3 | 7.8 | 3.9 | 13.0 | 27.0 | 2.3 | 3.7 | 6.0 |
| March----- | 2.3 | 8.3 | 3.8 | 10.2 | 24.6 | 2.2 | 3.5 | 5.7 |
| April----- | 2.4 | 9.4 | 3.7 | 10.7 | 26.2 | 2.4 | 3.3 | 5.7 |
| May----- | 2.4 | 7.5 | 3.5 | 10.3 | 23.7 | 2.4 | 3.3 | 5.7 |
| June----- | 2.4 | 7.6 | 3.5 | 10.4 | 23.8 | 2.4 | 3.3 | 5.7 |
| July----- | 2.4 | 7.8 | 3.7 | 13.0 | 26.9 | 2.4 | 3.4 | 5.8 |
| August----- | 2.4 | 8.2 | 3.9 | 8.0 | 22.5 | 2.4 | 3.4 | 5.8 |
| September----- | 2.4 | 8.6 | 4.0 | 9.0 | 24.0 | 2.4 | 3.6 | 6.0 |
| October----- | 2.4 | 8.9 | 4.0 | 6.0 | 21.3 | 2.4 | 3.6 | 6.0 |
| November----- | 2.5 | 9.4 | 3.9 | 4.0 | 19.8 | 2.4 | 3.6 | 6.0 |
| December----- | 2.4 | 9.8 | 3.9 | 11.9 | 28.0 | 2.5 | 3.6 | 6.1 |
| Average-- | 2.4 | 8.4 | 3.8 | 10.0 | 24.6 | 2.4 | 3.5 | 5.9 |

¹ In base paying months—March, April, May, and June—premium was paid on base milk only.

Note: The larger patronage refund received by Grade A producers reflects the higher price paid for their milk. The co-op used the same basis for distributing refunds to both Grade A and manufacturing grade producers—a specified amount per dollar of milk shipped to the plant.

Appendix table 11.—Cooperative Z: Average number of Grade A and manufacturing grade producers and their average daily delivery, 1955–1958 ¹

| Year and month | Grade A producers | | | Manufacturing grade producers | | |
|----------------|-------------------|----------------------------|-----------------------|-------------------------------|----------------------------|-----------------------|
| | Number | Average daily delivery | Total receipts | Number | Average daily delivery | Total receipts |
| 1955 | | | | | | |
| | | <i>Pounds per producer</i> | <i>Million pounds</i> | | <i>Pounds per producer</i> | <i>Million pounds</i> |
| January..... | 96 | 739 | 2.2 | 173 | 410 | 2.2 |
| February..... | 97 | 773 | 2.1 | 173 | 434 | 2.1 |
| March..... | 96 | 706 | 2.1 | 173 | 466 | 2.5 |
| April..... | 96 | 764 | 2.2 | 173 | 424 | 2.2 |
| May..... | 96 | 806 | 2.4 | 173 | 466 | 2.5 |
| June..... | 97 | 687 | 2.0 | 172 | 426 | 2.2 |
| July..... | 98 | 527 | 1.6 | 172 | 319 | 1.7 |
| August..... | 100 | 387 | 1.2 | 170 | 266 | 1.4 |
| September..... | 102 | 359 | 1.1 | 168 | 159 | .8 |
| October..... | 104 | 465 | 1.5 | 167 | 212 | 1.1 |
| November..... | 105 | 571 | 1.8 | 166 | 281 | 1.4 |
| December..... | 106 | 730 | 2.4 | 165 | 352 | 1.8 |
| Average..... | 99 | 625 | 1.9 | 170 | 351 | 1.8 |
| 1956 | | | | | | |
| January..... | 106 | 791 | 2.6 | 165 | 411 | 2.1 |
| February..... | 104 | 829 | 2.5 | 167 | 434 | 2.1 |
| March..... | 104 | 837 | 2.7 | 167 | 425 | 2.2 |
| April..... | 105 | 794 | 2.5 | 166 | 442 | 2.2 |
| May..... | 105 | 768 | 2.5 | 170 | 398 | 2.1 |
| June..... | 106 | 723 | 2.3 | 169 | 414 | 2.1 |
| July..... | 106 | 548 | 1.8 | 168 | 269 | 1.4 |
| August..... | 106 | 396 | 1.3 | 166 | 194 | 1.0 |
| September..... | 107 | 436 | 1.4 | 165 | 162 | .8 |
| October..... | 108 | 597 | 2.0 | 164 | 216 | 1.1 |
| November..... | 108 | 710 | 2.3 | 164 | 285 | 1.4 |
| December..... | 111 | 814 | 2.8 | 161 | 341 | 1.7 |
| Average..... | 106 | 686 | 2.2 | 166 | 333 | 1.7 |
| 1957 | | | | | | |
| January..... | 112 | 893 | 3.1 | 161 | 381 | 1.9 |
| February..... | 111 | 901 | 2.8 | 160 | 402 | 1.8 |
| March..... | 111 | 901 | 3.1 | 160 | 423 | 2.1 |
| April..... | 111 | 871 | 2.9 | 160 | 417 | 2.0 |
| May..... | 114 | 849 | 3.0 | 157 | 452 | 2.2 |
| June..... | 114 | 789 | 2.7 | 157 | 425 | 2.0 |
| July..... | 113 | 628 | 2.2 | 158 | 286 | 1.4 |
| August..... | 114 | 453 | 1.6 | 158 | 204 | 1.0 |
| September..... | 116 | 460 | 1.6 | 155 | 172 | .8 |
| October..... | 116 | 612 | 2.2 | 155 | 229 | 1.1 |
| November..... | 118 | 706 | 2.5 | 154 | 281 | 1.3 |
| December..... | 118 | 820 | 3.0 | 153 | 337 | 1.6 |
| Average..... | 114 | 740 | 2.6 | 157 | 334 | 1.6 |
| 1958 | | | | | | |
| January..... | 129 | 850 | 3.4 | 160 | 423 | 2.1 |
| February..... | 128 | 921 | 3.3 | 161 | 466 | 2.1 |
| March..... | 132 | 880 | 3.6 | 160 | 504 | 2.5 |
| April..... | 133 | 852 | 3.4 | 158 | 506 | 2.4 |
| May..... | 133 | 849 | 3.5 | 156 | 517 | 2.5 |
| June..... | 137 | 803 | 3.3 | 153 | 501 | 2.3 |
| July..... | 140 | 599 | 2.6 | 153 | 358 | 1.7 |
| August..... | 143 | 451 | 2.0 | 151 | 256 | 1.2 |
| September..... | 145 | 483 | 2.1 | 150 | 222 | 1.0 |
| October..... | 154 | 628 | 3.0 | 150 | 280 | 1.3 |
| November..... | 155 | 774 | 3.6 | 150 | 333 | 1.5 |
| December..... | 158 | 878 | 4.3 | 149 | 411 | 1.9 |
| Average..... | 141 | 747 | 3.2 | 154 | 398 | 1.9 |

¹ Each farm is considered one producer.

Appendix table 12.—Cooperative Z: Seasonal indexes of average daily deliveries per Grade A and manufacturing grade producer, 1955–1958

| Month | Grade A | | | | Manufacturing grade | | | |
|----------------------------------------------|---------|------|------|------|---------------------|------|------|------|
| | 1955 | 1956 | 1957 | 1958 | 1955 | 1956 | 1957 | 1958 |
| <i>Monthly index in percent ¹</i> | | | | | | | | |
| January..... | 118 | 115 | 121 | 114 | 117 | 123 | 114 | 106 |
| February..... | 124 | 121 | 122 | 123 | 124 | 130 | 120 | 117 |
| March..... | 113 | 122 | 122 | 118 | 133 | 128 | 127 | 127 |
| April..... | 122 | 116 | 118 | 114 | 121 | 133 | 125 | 127 |
| May..... | 129 | 112 | 115 | 114 | 133 | 120 | 135 | 130 |
| June..... | 110 | 105 | 107 | 108 | 121 | 124 | 127 | 126 |
| July..... | 84 | 80 | 85 | 80 | 91 | 81 | 86 | 90 |
| August..... | 62 | 58 | 61 | 60 | 76 | 58 | 61 | 64 |
| September..... | 57 | 64 | 62 | 65 | 45 | 49 | 52 | 56 |
| October..... | 74 | 87 | 83 | 84 | 60 | 65 | 69 | 70 |
| November..... | 91 | 103 | 95 | 104 | 80 | 86 | 84 | 84 |
| December..... | 117 | 119 | 111 | 118 | 100 | 102 | 101 | 103 |

¹ Average daily deliveries per producer each month divided by the mean of the 12 monthly average daily deliveries per producer.

Appendix table 13.—Cooperative Z: Volume of Grade A milk sold in bulk fluid outlets and used in plant's manufacturing operation, 1955–1958

| Year and month | Grade A intake | Bulk sales to | | Total fluid sales | Used in manufacturing | Percentage of Grade A manufactured |
|----------------|------------------------|-----------------|------------------|-------------------|-----------------------|------------------------------------|
| | | Local firms | Chicago handlers | | | |
| 1955 | | Thousand pounds | | | | Percent |
| January----- | 2, 197. 8 | 0 | 1, 553. 8 | 1, 553. 8 | 644. 0 | 29. 3 |
| February----- | 2, 134. 4 | 0 | 1, 553. 8 | 1, 553. 8 | 580. 6 | 27. 2 |
| March----- | 2, 125. 8 | 0 | 1, 731. 2 | 1, 731. 2 | 394. 6 | 18. 6 |
| April----- | 2, 204. 2 | 0 | 1, 472. 1 | 1, 472. 1 | 732. 1 | 33. 2 |
| May----- | 2, 369. 6 | 0 | 1, 553. 5 | 1, 553. 5 | 816. 1 | 34. 4 |
| June----- | 1, 953. 7 | 0 | 1, 613. 4 | 1, 613. 4 | 340. 3 | 17. 4 |
| July----- | 1, 557. 8 | 0 | 1, 401. 3 | 1, 401. 3 | 156. 5 | 10. 0 |
| August----- | ¹ 1, 250. 1 | 0 | 1, 198. 3 | 1, 198. 3 | 51. 8 | 4. 1 |
| September----- | ² 1, 092. 3 | 0 | 1, 050. 0 | 1, 050. 0 | 42. 3 | 3. 9 |
| October----- | ³ 1, 486. 6 | 0 | 1, 455. 5 | 1, 455. 5 | 31. 1 | 2. 1 |
| November----- | 1, 855. 6 | 0 | 1, 808. 8 | 1, 808. 8 | 46. 8 | 2. 5 |
| December----- | 2, 343. 7 | 0 | 2, 012. 0 | 2, 012. 0 | 331. 7 | 14. 2 |
| Total--- | 22, 571. 6 | 0 | 18, 403. 7 | 18, 403. 7 | 4, 167. 9 | 18. 5 |

See footnotes at end of table.

(Continued)

**Appendix table 13.—Cooperative Z: Volume of Grade A milk sold in bulk fluid outlets and used in plant's manufacturing operation, 1955–1958—
(Continued)**

| Year and month | Grade A intake | Bulk sales to | | Total fluid sales | Used in manufacturing | Percentage of Grade A manufactured |
|----------------|----------------------|-----------------|------------------|-------------------|-----------------------|------------------------------------|
| | | Local firms | Chicago handlers | | | |
| 1956 | | Thousand pounds | | | | Percent |
| January | 2,695.5 | 4.4 | 2,433.2 | 2,437.6 | 257.9 | 9.6 |
| February | 2,491.9 | 6.5 | 2,022.6 | 2,029.1 | 462.8 | 18.6 |
| March | 2,712.8 | 6.3 | 1,914.2 | 1,920.5 | 792.3 | 29.2 |
| April | 2,565.6 | 0 | 1,684.0 | 1,684.0 | 881.6 | 34.4 |
| May | 2,531.2 | 0 | 1,585.6 | 1,585.6 | 945.6 | 37.4 |
| June | 2,280.9 | 0 | 1,507.5 | 1,507.5 | 773.4 | 33.9 |
| July | 1,799.2 | 25.7 | 1,457.7 | 1,483.4 | 315.8 | 17.6 |
| August | 1,304.8 | 24.1 | 1,109.9 | 1,134.0 | 170.8 | 13.1 |
| September | ⁴ 1,815.8 | 224.0 | 1,282.4 | 1,506.4 | 309.4 | 17.0 |
| October | ⁵ 2,643.3 | 302.9 | 1,643.8 | 1,946.7 | 696.6 | 26.4 |
| November | ⁶ 3,002.6 | 370.7 | 1,729.5 | 2,100.2 | 902.4 | 30.1 |
| December | 2,781.9 | 2.0 | 1,639.6 | 1,641.6 | 1,140.3 | 40.9 |
| Total | 28,625.5 | 966.6 | 20,010.0 | 20,976.6 | 7,648.9 | 26.7 |
| 1957 | | | | | | |
| January | 3,056.9 | 0 | 1,720.0 | 1,720.0 | 1,336.9 | 43.7 |
| February | 2,835.5 | 0 | 1,499.6 | 1,499.6 | 1,335.9 | 47.1 |
| March | 3,099.3 | 0 | 473.1 | 473.1 | 2,626.2 | 84.7 |
| April | 2,911.1 | 0 | 113.0 | 113.0 | 2,798.1 | 96.1 |
| May | 2,974.0 | 0 | 0 | 0.0 | 2,974.0 | 100.0 |
| June | 2,738.4 | 29.9 | 0 | 29.9 | 2,708.5 | 98.9 |
| July | 2,156.2 | 0 | 1,080.6 | 1,080.6 | 1,075.6 | 49.8 |
| August | 1,559.2 | 3.1 | 1,368.9 | 1,372.0 | 187.2 | 12.0 |
| September | 1,572.6 | 26.3 | 1,318.1 | 1,344.4 | 228.2 | 14.5 |
| October | 2,148.8 | 22.7 | 1,358.0 | 1,380.7 | 768.1 | 35.7 |
| November | 2,522.0 | 17.4 | 1,322.0 | 1,339.4 | 1,182.6 | 46.9 |
| December | 3,037.3 | 7.7 | 1,356.9 | 1,364.6 | 1,672.7 | 55.1 |
| Total | 30,611.3 | 107.1 | 11,610.2 | 11,717.3 | 18,894.0 | 61.7 |
| 1958 | | | | | | |
| January | 3,431.4 | 0 | 652.3 | 652.3 | 2,779.1 | 81.0 |
| February | 3,256.2 | 0 | 0 | 0 | 3,256.2 | 100.0 |
| March | 3,617.6 | 0 | 0 | 0 | 3,617.6 | 100.0 |
| April | 3,433.6 | 0 | 0 | 0 | 3,433.6 | 100.0 |
| May | 3,527.4 | 0 | 0 | 0 | 3,527.4 | 100.0 |
| June | 3,313.2 | 8.8 | 0 | 8.8 | 3,304.4 | 99.7 |
| July | 2,578.8 | 16.2 | 89.4 | 105.6 | 2,473.2 | 95.9 |
| August | 1,971.9 | 23.9 | 1,358.6 | 1,382.5 | 589.4 | 29.9 |
| September | 2,098.4 | 121.4 | 1,311.0 | 1,432.4 | 666.0 | 31.7 |
| October | 2,947.4 | 27.3 | 1,351.6 | 1,378.9 | 1,568.5 | 53.2 |
| November | 3,559.7 | 20.1 | 1,319.6 | 1,339.7 | 2,220.0 | 62.4 |
| December | 4,269.1 | 21.3 | 21.4 | 42.7 | 4,226.4 | 99.0 |
| Total | 38,004.7 | 239.0 | 6,103.9 | 6,342.9 | 31,661.8 | 83.3 |

¹ Includes 39,142 pounds purchased from other plants.

² Includes 28,645 pounds purchased from other plants.

³ Includes 24,549 pounds purchased from other plants.

⁴ Includes 214,525 pounds purchased from other plants.

⁵ Includes 302,936 pounds purchased from other plants.

⁶ Includes 369,896 pounds purchased from other plants.

Appendix table 14.—Cooperative Z: Comparison of prices, f.o.b. plant, paid for Grade A and manufacturing grade milk, 1955–1958 ¹

| Year and month | Manufacturing grade milk | Grade A | |
|----------------|-------------------------------------------------|-------------------|--------------|
| | | Milk ² | Differential |
| | <i>Dollars per 100 lbs. of 3.5 percent milk</i> | | <i>Cents</i> |
| 1955 | | | |
| January..... | 3. 02 | 3. 35 | 33 |
| February..... | 3. 00 | 3. 31 | 31 |
| March..... | 2. 95 | 3. 14 | 19 |
| April..... | 2. 95 | 3. 13 | 18 |
| May..... | 2. 90 | 3. 07 | 17 |
| June..... | 2. 90 | 3. 15 | 25 |
| July..... | 2. 95 | 3. 32 | 37 |
| August..... | 3. 00 | 3. 65 | 65 |
| September..... | 3. 05 | 3. 73 | 68 |
| October..... | 3. 10 | 3. 76 | 66 |
| November..... | 3. 10 | 3. 75 | 65 |
| December..... | 3. 05 | 3. 57 | 52 |
| Average..... | 3. 00 | 3. 41 | 41 |
| 1956 | | | |
| January..... | 3. 05 | 3. 48 | 43 |
| February..... | 3. 00 | 3. 45 | 45 |
| March..... | 3. 00 | 3. 27 | 27 |
| April..... | 3. 00 | 3. 38 | 38 |
| May..... | 3. 05 | 3. 48 | 43 |
| June..... | 3. 05 | 3. 51 | 46 |
| July..... | 3. 10 | 3. 60 | 50 |
| August..... | 3. 15 | 3. 73 | 58 |
| September..... | 3. 15 | 3. 70 | 55 |
| October..... | 3. 20 | 3. 75 | 55 |
| November..... | 3. 20 | 3. 74 | 54 |
| December..... | 3. 20 | 3. 55 | 35 |
| Average..... | 3. 10 | 3. 55 | 45 |
| 1957 | | | |
| January..... | 3. 17 | 3. 49 | 32 |
| February..... | 3. 10 | 3. 46 | 36 |
| March..... | 3. 10 | 3. 32 | 22 |
| April..... | 3. 08 | 3. 29 | 21 |
| May..... | 3. 08 | 3. 22 | 14 |
| June..... | 3. 08 | 3. 25 | 17 |
| July..... | 3. 12 | 3. 37 | 25 |
| August..... | 3. 12 | 3. 55 | 43 |
| September..... | 3. 15 | 3. 58 | 43 |
| October..... | 3. 20 | 3. 57 | 37 |
| November..... | 3. 15 | 3. 60 | 45 |
| December..... | 3. 15 | 3. 42 | 27 |
| Average..... | 3. 13 | 3. 43 | 30 |

(Continued)

¹ These prices do not include any premiums, hauling subsidies, or patronage refunds.

² Uniform blend or weighted average prices are adjusted for plant location under Federal Milk Order 41. During the base paying months, March, April, May, and June—Grade A milk prices were calculated by weighting base and excess milk prices with the plant's base and excess milk receipts for these months.

Appendix table 14.—Cooperative Z: Comparison of prices, f.o.b. plant, paid for Grade A and manufacturing grade milk, 1955–1958 ¹—(Continued)

| Year and month | Manufacturing grade milk | Grade A | |
|----------------|-----------------------------|-------------------------------------------------|--------------|
| | | Milk ² | Differential |
| | | <i>Dollars per 100 lbs. of 3.5 percent milk</i> | |
| 1958 | | | <i>Cents</i> |
| January | 3. 13 | 3. 40 | 27 |
| February | 3. 13 | 3. 38 | 25 |
| March | 3. 07 | 3. 22 | 15 |
| April | 2. 90 | 3. 15 | 25 |
| May | 2. 92 | 3. 04 | 12 |
| June | 2. 92 | 3. 00 | 8 |
| July | 2. 95 | 3. 17 | 22 |
| August | 3. 00 | 3. 37 | 37 |
| September | 3. 07 | 3. 45 | 38 |
| October | 3. 10 | 3. 39 | 29 |
| November | 3. 10 | 3. 36 | 26 |
| December | 3. 07 | 3. 26 | 19 |
| Average | 3. 03 | 3. 27 | 24 |

Appendix table 15.—Cooperative Z: Average additional payments per hundredweight paid to producers for Grade A and manufacturing grade milk, 1955–1958

| Year and month | Grade A milk | | | Manufacturing grade milk |
|--------------------------------|--------------------|-------------------|-------|--------------------------|
| | Bulk milk premiums | Patronage refunds | Total | Patronage refunds |
| <i>Cents per hundredweight</i> | | | | |
| 1955 | | | | |
| January | | 3. 5 | 3. 5 | 3. 7 |
| February | | 3. 6 | 3. 6 | 3. 7 |
| March | | 3. 5 | 3. 5 | 3. 7 |
| April | | 3. 5 | 3. 5 | 3. 7 |
| May | | 3. 5 | 3. 5 | 3. 8 |
| June | | 3. 5 | 3. 5 | 3. 7 |
| July | 1. 6 | 3. 5 | 5. 1 | 3. 8 |
| August | 2. 9 | 3. 6 | 6. 5 | 3. 9 |
| September | 3. 9 | 3. 7 | 7. 6 | 4. 0 |
| October | 4. 6 | 3. 8 | 8. 4 | 3. 9 |
| November | 4. 5 | 3. 7 | 8. 2 | 3. 9 |
| December | 5. 2 | 3. 7 | 8. 9 | 3. 8 |
| Average | 1. 9 | 3. 6 | 5. 5 | 3. 8 |
| 1956 | | | | |
| January | 5. 7 | 7. 4 | 13. 1 | 7. 5 |
| February | 7. 1 | 7. 3 | 14. 4 | 7. 5 |
| March | 8. 4 | 7. 3 | 15. 7 | 7. 5 |
| April | 8. 5 | 7. 3 | 15. 8 | 7. 5 |
| May | 7. 1 | 7. 4 | 14. 5 | 7. 6 |
| June | 7. 2 | 7. 2 | 14. 4 | 7. 6 |
| July | 8. 9 | 7. 4 | 16. 3 | 7. 9 |
| August | 10. 7 | 7. 5 | 18. 2 | 8. 0 |
| September | 8. 8 | 7. 5 | 16. 3 | 8. 0 |
| October | 7. 8 | 7. 3 | 15. 1 | 7. 7 |
| November | 7. 7 | 7. 4 | 15. 1 | 7. 9 |
| December | 7. 8 | 7. 4 | 15. 2 | 7. 7 |
| Average | 8. 0 | 7. 4 | 15. 4 | 7. 7 |

(Continued)

Appendix table 15.—Cooperative Z: Average additional payments per hundredweight paid to producers for Grade A and manufacturing grade milk, 1955-1958—(Continued)

| Year and month | Grade A milk | | | | | Manufacturing grade milk | | |
|--------------------------------|-------------------|--------------------|-------------------|------------------------------------|-------|--------------------------|-------------------|-------|
| | Hauling subsidies | Bulk milk premiums | Patronage refunds | Special pool premiums ¹ | Total | Hauling subsidies | Patronage refunds | Total |
| 1957 | | | | | | | | |
| <i>Cents per hundredweight</i> | | | | | | | | |
| January----- | 0 | 7.7 | 12.4 | 0 | 20.1 | 0 | 12.6 | 12.6 |
| February----- | 0 | 7.0 | 12.2 | 0 | 19.2 | 0 | 12.7 | 12.7 |
| March----- | 0 | 7.7 | 12.4 | 2.7 | 22.8 | 0 | 12.8 | 12.8 |
| April----- | 0 | 8.3 | 12.5 | 7.2 | 28.0 | 0 | 12.9 | 12.9 |
| May----- | 0 | 8.5 | 12.5 | 7.1 | 28.1 | 0 | 13.1 | 13.1 |
| June----- | 0 | 9.0 | 12.3 | 7.4 | 28.7 | 0 | 12.8 | 12.8 |
| July----- | 0 | 9.3 | 12.3 | 0 | 21.6 | 0 | 13.0 | 13.0 |
| August----- | 0.2 | 11.2 | 12.7 | 0 | 24.1 | 0.3 | 13.0 | 13.3 |
| September----- | .1 | 11.3 | 13.2 | 0 | 24.6 | .3 | 13.6 | 13.9 |
| October----- | .1 | 9.8 | 12.9 | 7.0 | 29.8 | .2 | 13.5 | 13.7 |
| November----- | .1 | 9.6 | 12.8 | 4.0 | 26.5 | .1 | 13.2 | 13.3 |
| December----- | (?) | 9.7 | 12.6 | 13.0 | 35.3 | .1 | 13.0 | 13.1 |
| Average-- | (?) | 9.1 | 12.6 | 4.0 | 25.7 | .1 | 13.0 | 13.1 |
| 1958 | | | | | | | | |
| January----- | .2 | 9.8 | 13.6 | 13.0 | 36.6 | .4 | 14.1 | 14.5 |
| February----- | .1 | 9.2 | 13.6 | 13.0 | 35.9 | .3 | 14.0 | 14.3 |
| March----- | .2 | 9.3 | 13.6 | 8.8 | 31.9 | .4 | 13.8 | 14.2 |
| April----- | .2 | 9.0 | 13.7 | 9.4 | 32.3 | .5 | 13.6 | 14.1 |
| May----- | .2 | 9.2 | 13.5 | 9.9 | 32.8 | .6 | 13.9 | 14.5 |
| June----- | .2 | 9.4 | 13.3 | 10.1 | 33.0 | .5 | 13.9 | 14.4 |
| July----- | .4 | 9.7 | 13.6 | 13.0 | 36.7 | 1.1 | 14.3 | 15.4 |
| August----- | .4 | 9.7 | 13.8 | 8.0 | 31.9 | 1.1 | 14.5 | 15.6 |
| September----- | .4 | 9.7 | 14.1 | 9.0 | 33.2 | 1.0 | 14.7 | 15.7 |
| October----- | .3 | 9.6 | 14.0 | 6.0 | 29.9 | .8 | 14.7 | 15.5 |
| November----- | .2 | 9.4 | 14.0 | 4.0 | 27.6 | .5 | 14.6 | 15.1 |
| December----- | .5 | 9.5 | 13.8 | 11.9 | 35.7 | 1.3 | 14.5 | 15.8 |
| Average-- | .3 | 9.5 | 13.7 | 9.7 | 33.2 | .7 | 14.2 | 14.9 |

¹ In base paying months—March, April, May, and June—premium is paid on base milk only.

² Less than 0.05 cent.

Note: The larger patronage refunds received by manufacturing grade milk producers reflect the higher average butterfat test of their milk. The co-op used the same basis for distributing refunds to both manufacturing grade and Grade A milk producers—a specified amount per pound of butterfat shipped to the plant.

Other Publications Available

The Story of Farmers' Cooperatives, Educational Circular 1.

Organizing a Farmer Cooperative, FCS Circular 18.

Multiquart Containers—Their Significance in Dairy Cooperatives, General Report 54. *William J. Monroe.*

Grade A Milk Marketing by Manufacturing Co-ops, General Report 56. *Donald R. Davidson.*

Seasonal Milk Pricing Plans, Bulletin 12. *Stanley F. Krause.*

Dairy Cooperatives Help Find Markets, FCS Bulletin 1, Reprint 2. *Donald E. Hirsch.*

Comparing Bulk and Can Milk Hauling Costs, FCS Circular 14. *Joseph M. Cowden.*

Bulk Milk Handling in 1955, General Report 22. *Joseph M. Cowden.*

Pricing Milk According to Use, FCS Bulletin 6. *Stanley F. Krause.*

Meeting Seasonal Problems of Dairy Cooperatives through Education, FCS Bulletin 9. *Stanley F. Krause.*

Selling Milk . . . Ideas for Cooperative Managements, FCS General Report 20. *Donald E. Hirsch.*

Integrated Dairy Operations through Farmer Cooperatives, General Report 69. *Anne L. Gessner.*

A copy of each of these publications may be obtained upon request while a supply is available from—

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